

**THE AMBIGUITY OF ELECTRONIC CIGARETTES:
REFLECTIONS ON BOUNDARY OBJECTS AND
BIOMEDICALIZATION**

A thesis submitted for the degree of Doctor of Philosophy

by

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Abstract

This thesis investigates the perceptions of electronic cigarettes held by electronic cigarette users and stop smoking advisors in South East England between 2014 and 2015. This qualitative study draws on two thematically analysed datasets: 15 semi-structured interviews with electronic cigarette users and 13 semi-structured interviews with stop smoking advisors.

The theoretical underpinnings of my empirical investigation are the Boundary Objects theory and Biomedicalization theory. I discuss how electronic cigarettes as boundary objects can function as both translational and facilitative objects between different actors, who construct different social meanings of electronic cigarettes. I clarify how the different social meanings attached to electronic cigarettes are impacted by the wider political, cultural and technological processes of biomedicalization. I also argue that biomedicalization processes are the outcome of divergent, but coexisting, perceptions and meanings. Electronic cigarettes bring both opportunities and threats, including the ways in which electronic cigarettes challenge contemporary social meanings of addiction and how such new innovations can prompt wider social and political changes.

All my data exhibits a high level of ambiguity regarding electronic cigarettes' status, efficacy and potential health and social risks. However, the research also shows different representations of electronic cigarettes that are related to a biomedical model of understanding and managing nicotine addiction, where individualisation and empowerment are at the core. Lastly, the data shows a potential for social change towards a socially acceptable recreational use of nicotine that mimics smoking, in spite of some electronic cigarette users' concern about stigma potentially shifting from smokers to electronic cigarette users.

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Author's Declaration

I hereby declare that I am the sole author of this thesis.

I authorise Brunel University London to lend this thesis to other institutions or individuals for the purpose of scholarly research.

Signature

Date:

List of Abbreviations

ASH	Action on Smoking and Health
DOH	Department of Health
ENDS	Electronic Nicotine Delivery Systems
FCTC	Framework Convention on Tobacco Control
GB	Great Britain
HIV/AIDS	Human immunodeficiency virus/Acquired immunodeficiency syndrome
MHRA	Medicines & Healthcare Products Regulatory Agency
NHS	National Health Service
NICE	National Institute for Health and Care Excellence
NRT	Nicotine Replacement Therapies
PHE	Public Health England
RCP	Royal College of Physicians
STS	Smoking Toolkit Study
UK	United Kingdom
US	United States
WHO	World Health Organization

Chapter 1. Electronic Cigarettes: Emergent Quandary

1.1. Introduction

The main aim of this chapter is to set out the context through which the study will be developed. This thesis investigates the perceptions of electronic cigarettes (e-cigarettes) held by electronic cigarette users (vapers) and stop smoking advisors in South East England, between 2014 and 2015. Although this study focuses on the current use of electronic cigarettes, it is difficult to ignore the fact that the arguments of both advocates and opponents of electronic cigarette use, have their roots in the era that precedes the existence of electronic cigarettes. Hence, this chapter introduces the historical view of harm reduction strategy in relation to nicotine use in the United Kingdom (UK) and focuses on the social, political and media discourses that influence the discourse of electronic cigarettes. This overview is vital to fully understand the ongoing debate about electronic cigarettes and to grasp the complex factors that shape the perceptions of electronic cigarettes. It is important to point out that, although this is a South East England-based study, the literature review presents a holistic overview from the UK. This is because much of the literature that is relevant to this thesis does not provide specific information from England only. Whenever English-specific data was available, I point it out.

The aim of this literature review is to map out the relevant empirical literature, highlight the gaps, position this thesis in its wider research context and introduce the research questions. The literature review is divided into two chapters (Chapter 1 and 2). The structure of this chapter is as follows. First, it begins with a brief history of tobacco use and nicotine addiction. Second, it reflects on the history of tobacco public health and the emergence of harm reduction in the UK. Third, I present an overview of electronic cigarette use and its position within harm reduction in the UK and highlight some contextual factors that influence the discourse of electronic cigarettes, which include their position within the Stop Smoking Services, the tobacco industry, marketing and the media. Fourth, I present my reasons for choosing to conduct this sociological study and present the theoretical framework. I then introduce the research questions and, finally, I outline the structure of the thesis. The second chapter presents the existing literature regarding the risks attributed to electronic cigarettes as identified in national and international studies. It also provides a

literature review on the sociology of risk by introducing relevant risk theories. It discusses the link between risk perceptions and trust between professionals and lay people, and explores risk perceptions and stigma.

1.2. The History of Tobacco Use and Nicotine Addiction

1.2.1. Tobacco Use in the UK

This section traces the development of tobacco use in the UK. This overview enables us to understand how electronic cigarette perceptions emerged from earlier experiences.

It is suggested that tobacco smoking in Europe began around 1560 and was used to treat some illnesses such as headaches, intestinal worms, coughs and epilepsy (Doll, 2004; Milne, 2011). In the 17th century, tobacco cultivation resulted in high tobacco consumption in England (Mold, 2011). Pipes were the most popular way to consume tobacco at that time, followed by snuff in the 18th century, which was then replaced by cigars. Philip Morris, which is currently one of the world's largest private cigarette companies, was established in 1847 as a tobacconist in London, selling hand-rolled Turkish cigarettes, which became popular among British soldiers during the Crimean War (1853-6). Later, the mass manufacturing of cigarettes led to a global growth in the habit of tobacco use and the beginning of the smoking epidemic. This was accelerated by the creation of transnational tobacco companies, accompanied by mass advertising, promotion and glamorising of particular brands (Thun and Henley, 2004; Doll, 2004; RCP, 2007: 2-3).

In the West, although manufactured cigarettes are the most common way of consuming tobacco, there are various methods used around the world, including using hand-rolled cigarettes, cigars, pipes, water pipes, chewing tobacco, moist snuff and dry snuff (RCP, 2007: 5). In the UK, male smoking increased rapidly during the two world wars and, by the late 1940s, an estimated 65% of men were smoking cigarettes. Then, the prevalence of male smoking began to fall until the early 1990s. Women began to smoke approximately 20 years after males, reaching a peak in about the mid-1970s. Afterwards, rates of smoking for both males and females fell substantially (RCP, 2007: 9). Latest smoking statistics show that there are about 9.1 million adult smokers in the UK and 8.7 million in Great Britain (GB) (ASH, 2017). Official statistics showed that the proportion of adults smoking, in the UK, has declined to its lowest level since recording started in the 1940s, with

official figures suggesting that the prevalence among the over-18s fell from 19.8% in 2012 to 18.7% in 2013, and continued to 18.3% in 2014. England had the lowest proportion of cigarette smokers in 2014 (18.0%) compared to other parts of the UK (ONS, 2015).

Throughout the 19th and the 20th centuries, several harmful effects and diseases proved to be associated with smoking, most importantly mouth cancer, myocardial infarction and lung cancer. It is estimated that more than 35 diseases are partly caused by smoking (Doll, 2004: 4-9). However, Sir Richard Doll, a pioneering tobacco epidemiologist, remarked that accepting the medical evidence of tobacco harms took more than 200 years. Doll attributed the resistance to agreeing that smoking causes cancer, from 1950 to 1964 in particular, to the following reasons: the widespread nature of the habit among adult males, including scientists and doctors, the newly acquired epidemiological techniques and the importance given to bacteriological explanations for diseases (Doll, 1998). This argument is relevant to my study because it shows that harm is not the key factor for accepting or rejecting an object or a phenomenon. It also conforms to views that suggest the social, cultural and historical context of drug use is a key issue for tobacco control policies (Mold, 2011; Hansen and Roberts, 2012). The influence of these factors is apparent throughout the discussion of tobacco and electronic cigarette use in this thesis.

Over time, more morbidities and mortalities resulted from smoking across the globe. It was estimated that, in 2014, there were around 1.1 thousand million smokers worldwide. Using tobacco products causes about 4.9 million deaths a year; that figure is expected to rise to 10 million deaths per year by the 2020s or early 2030s. Amongst industrialised countries, smoking is estimated to cause over 90% of lung cancer in men and around 70% of lung cancer in women. In addition, an estimation of 56-80% of chronic respiratory disease and 22% of cardiovascular disease is attributed to smoking (WHO, 2014a). In the UK, it is estimated that approximately 96,000 smokers die from smoking-related causes (ASH, 2016c). Consequently, public health policies to combat tobacco use have been a fundamental issue for the UK government (ASH, 2015c). However, there is a claim that other social, economic and political factors influence these policies (Elam, 2012; Netherland, 2012). For example, it has been suggested that the revenue from tobacco tax to the economy hinders any real efforts to eliminate tobacco use (Mold, 2011). Before discussing the history of tobacco public health, it is important to present some information about

nicotine. This will help elucidate the prominent position that nicotine has acquired in the field of tobacco public health.

1.2.2. Nicotine Addiction

To understand the debate about electronic cigarette use, it is important to understand how electronic cigarettes link to nicotine. This section provides an overview of the available evidence on nicotine, its role in smoking addiction and concludes by presenting the existing views of leading health organisations in the UK, which form the basis for current tobacco public health measures.

Nicotine Characteristics

Historically, world-leading health organisations, such as the Royal College of Physicians in the UK (RCP), the Advisory Committee to the US Surgeon General on Smoking and Health and the World Health Organization (WHO), viewed smoking as a sign of ‘habituation’, where social factors and personal characteristics influence the habit rather than biological addiction. It was not until the late 1970s that such organisations began to view smoking as a form of addiction. In 1988, cigarettes were declared to be addictive and nicotine as the main cause of addiction due to more proven psychological and physiological effects of smoking (Parascandola, 2005; Keane, 2013: 190). Nicotine is defined by the *Oxford Dictionary* (2016) as a:

toxic colourless or yellowish oily liquid which is the chief active constituent of tobacco. It acts as a stimulant in small doses, but in larger amounts blocks the action of autonomic nerve and skeletal muscle cells.

Among scholars, there is no consensus with regards to the effects of nicotine use. Studies suggest that nicotine can be poisonous at very high dosages, much higher than those contained in medications and cigarettes. A 40-60 mg nicotine dose can be lethal for humans; however, a dose of 1 mg acts as a stimulant. Several studies have demonstrated that nicotine causes a negative effect on animal and human brain development, an influence which is believed to continue to adolescence (Dwyer, Broide and Leslie, 2008; Liao et al., 2012; Longo et al., 2013). Although there are no experimental studies in humans on the carcinogenic effects of pure nicotine-containing products, it has been suggested that some evidence from experimental *in vitro* studies on cell cultures, *in vivo* studies on rodents and

observational studies on humans indicate that nicotine may contribute to cancer development (Sanner and Grimsrud, 2015). However, the RCP (2016: 5) states that nicotine is not a highly hazardous drug and 'is not a carcinogen'.

Evidence suggests that nicotine is an addictive substance. The 1988 Surgeon General's Report on The Health Consequences of Smoking provided evidence to underpin the notion that nicotine is addictive like heroin and cocaine. The report states:

All of these drugs [opioids, amphetamines, barbiturates, certain organic solvents, alcohol, cocaine, and nicotine] were found to maintain powerful chains of drug-seeking behavior, even when insufficient drug was taken to produce a clinically significant degree of physical dependence. Drugs that did not serve as reinforcers in these studies included caffeine. (U.S. Department of Health and Human Services, 1988: 281)

Henningfield and Benowitz (2004: 139) pointed out that: 'the development of dependence to nicotine is far more common than that to cocaine, heroin, or alcohol', and that the intravenous nicotine produced a similar 'mood altering effect' as cocaine. Similarly, Foll and Goldberg (2009) concluded that evidence obtained from studies in experimental animals and humans indicate that nicotine can act like a typical drug of abuse. However, other *in vivo* studies showed that, although drugs of abuse induce changes in the brain, there are differences in the reward mechanisms for nicotine and cocaine (Seršen, Hashim and Lajtha, 2010). Indeed, Molimard (2013) demonstrated that brain stimulation by nicotine is very low compared to amphetamine and cocaine.

Although several definitions and models were proposed to explain addiction (West and Brown, 2013; West, 2013), the explanation provided by the biomedical model is widely accepted in the West. This model proposes that the addictive nature of nicotine is attributed to the activation of the reward pathways in the brain, resulting in increased secretion of the neurotransmitter dopamine, which regulates the feelings of pleasure experienced by many smokers. When smoking a cigarette, the nicotine reaches the brain within 10 seconds of inhalation. The positive effect of acute nicotine administration includes mild euphoria and mildly cognitive enhancement. However, this effect of pleasure disappears quickly and consequently causes smokers to continue smoking to maintain the reward effect and prevent withdrawal symptoms, thus maintaining tobacco addiction

(Markou, 2008; Benowitz, 2009). Withdrawal symptoms may include: irritability; depressed mood; anxiety and sleep disturbances. Although they do not pose a risk to life, they can be 'occupationally and socially debilitating' (Henningfield and Benowitz, 2004: 139; Glover, 2006; NIDA, 2015).

Moreover, studies found that materials in tobacco smoke, in addition to nicotine, may contribute to the development and maintenance of the habit of smoking (Foll and Goldberg, 2009). Each cigarette contains nicotine, which is accompanied by carcinogens that are responsible for inducing cancer (Cao et al., 2007). Hence, nicotine contained in tobacco is more toxic and addictive than pure nicotine (Henningfield and Benowitz, 2004). Scholars believe that the physical design of the cigarette can also optimise nicotine delivery (Fowles and Shusterman, 2004; WHO FCTC, 2012a: 12). Cultural, social, physical and economic factors are also believed to be associated with the maintenance of tobacco use (WHO FCTC, 2012a: 12). The RCP (2016: 101) states that nicotine addiction is sustained because of the 'reward given to stimuli and behaviours associated with nicotine delivery'.

The Introduction of Pharmaceutical Nicotine

During the 1970s, Professor Michael Russell explored the role of nicotine in smoking. He concluded that: 'People smoke for nicotine but they die from the tar' (Russell, 1976: 1431). Russell's findings that 'nicotine addiction is not harmful' (1991: 654) led him to promote the use of pharmacological 'clean' nicotine as a self-administration tool to replace the 'dirty' tobacco and fight smoking-related diseases. Nicotine chewing gum was the first pharmacological nicotine to be approved as a treatment for nicotine addiction and became widely available around the world during the 1980s. Other nicotine replacement therapies were introduced and sold in pharmacies and gained more support to be used as a strategy to stop smoking (Berridge, 1999: 40). Currently, different forms of nicotine replacement therapies are available, such as transdermal patches, tablets, oral inhalers, lozenges, nasal sprays and mouth mist (NICE, 2016a). The rationale for using these therapies is to produce lower plasma nicotine levels than those produced by smoking, yet at the same time to help to reduce withdrawal symptoms and craving (Glover, 2006).

Nevertheless, some scholars challenged the views that nicotine is addictive. For example, Molimard (2013) believed that the pharmaceutical industry has infiltrated the field

of smoking and created 'the myth of nicotine addiction'. He noted that there are no cases of using nicotine 'alone as a "drug" or addiction to nicotine', and that the well-accepted notion that nicotine is the cause of tobacco dependence was based on 'simple observations'. Similarly, Elam (2012: 56) argued that the acceptance of smoking as a substance-related disorder in the 1970s, and the rise of nicotine addiction thereafter as a global drug problem is linked to advances in nicotine pharmacotherapy. Elam believed that 'psychopharmacological' and 'neurobiological' researches were both triggered by the growth of the global nicotine replacement therapies' market; this, he confirmed, formed the basis of the neurobiology of addiction and the foundation for the US Surgeon General's Report in 1988 about nicotine addiction.

However, in the UK, it is generally believed that: 'People smoke because they are addicted to nicotine, but are harmed by other constituents of tobacco smoke' (RCP, 2016: 189), and that: 'the main driver of tobacco smoking is addiction to nicotine' (RCP, 2016: 5). Therefore, the recognition of nicotine as the addictive, not the harmful, substance that can be utilised medically has led to a series of tobacco public health measures where nicotine has attained a major role. This is discussed next.

1.3. Tobacco Public Health and the Emergence of Tobacco Harm Reduction

It is imperative to highlight the history of tobacco public health in order to understand the controversy surrounding electronic cigarettes today. An important account for electronic cigarettes stemmed from harm reduction, as this section reveals.

Tobacco Public Health

Scholars like Rosen (1993) identified different eras of public health throughout the history in the West, including Britain. It was suggested that public health work was mainly managed by engineers and politicians, not by doctors. It was not until 1860, when the germ theory was discovered, that the door opened for doctors to be part of the public health process. Although still focusing on managing the environment and providing services, it was argued that a process of increased 'medicalisation' of public health had originated (Gorsky, 2011: 27), and labels such as 'health promotion' and 'new public health' emerged (Berridge, 2011: 195). It was argued that, in the post-war era, the changing pattern of disease, where mortality from infectious diseases declined, but mortality from long-term chronic diseases,

cancer and cardiovascular diseases increased (Gorsky, 2011: 27), led to a rise of the concept of 'risk factors' and 'the role of psych-social factors in health' (Berridge, 2011: 199). Therefore, modern public health concepts, which started in the nineteenth century with the 'hygienist/preventive' model, were replaced by the 'biomedical model', which emphasises the responsibility of individuals to change their behaviours and lifestyles (Frenk, 1993: 479). It is in this new era that tobacco control and tobacco harm reduction were initiated and developed. For example, in 1971, Action on Smoking and Health (ASH), which actively works to eliminate the harms caused by tobacco, was established by the RCP in the UK (White, 2004: 208; Berridge, 2011: 200). Later, the globalisation of the tobacco epidemic led to more international health cooperation. For example, international law to combat tobacco was introduced via the Framework Convention on Tobacco Control (FCTC), adopted by the WHO Assembly in 2003 and embraced by governments around the world. Also, tobacco public health campaigns became globally widespread (Berridge, 2011: 209). It is in this context that I initially saw the relevance of biomedicalization theory to my thesis. The diffusion of the biomedical model in Western society will surely influence the perceptions of electronic cigarettes and, at the same time, the diverse perceptions of electronic cigarettes will influence biomedicalization. By drawing on my empirical data, I aim to explore this mutual link.

Tobacco Harm Reduction

The phenomenon of tobacco harm reduction has gained importance since the beginning of tobacco public health moves. Historically, the concept of harm reduction was applied to some psychoactive drugs before it was embraced by tobacco public health. Harm reduction was described as 'a pragmatic approach to psychoactive drug use', where 'Emphasis is on attainable short-term results over utopian long-term goals' (Des Jarlais, Friedman and Ward, 1993: 425). Harm reduction was defined as:

a social policy which prioritizes the aim of decreasing the negative effects of drug use as an alternative drug policy to abstentionism, which prioritizes the aim of decreasing the prevalence or incidence of drug use. (Newcombe, 1992: 1)

Newcombe (2015) perceives harm reduction as a strategy with a hierarchy of goals. For example, to reduce the transmission of HIV/AIDS among and from injecting drug users,

harm reduction strategies include: the termination of sharing of injection equipment; the use of oral drug use rather than injectable; a reduction in the amount of consumed drugs; and, finally, abstinence. Therefore, targeting drug consumption is one of the goals for harm reduction of HIV/AIDS.

For tobacco control, the tobacco harm reduction strategy has been controversial since its initiation. Initiatives against tobacco consumption can be traced back to 1616 when King James produced an anti-smoking tract that highlighted the dangers and the 'loathsome custom' of smoking (Milne, 2011). However, tobacco harm reduction efforts were increased in the 1950s, when the scientific evidence proved a causative relation between smoking and lung cancer (Doll, 2004: 6). To date, there is no consensus in the literature on the definition and approaches to tobacco harm reduction. The National Institute for Clinical Excellence (NICE), the body responsible for providing national guidance and advice to improve health and social care in England and Wales, defines tobacco harm reduction as 'measures to reduce the illnesses and deaths caused by smoking tobacco among people who smoke and those around them' (NICE, 2012a: 4). The publication of *Smoking and Health* by the RCP of London in 1962 and the US Surgeon General's Report in 1964 documented the link between smoking and lung cancer, as well as several other diseases (Doll, 2004: 8). As a result, the medical professions advised smokers to substitute smoking cigarettes with less harmful forms of smoking, which at the time included pipes and cigars. Since then, an emphasis on developing a 'safer cigarette' or 'less harmful cigarette' has been at the core of these policies (Berridge, 1999: 38). In the late 1960s, tobacco companies, responding to increased health concerns, introduced new brands such as 'light', 'filtered', 'low tar' and 'ultra-low tar', and marketed them as less dangerous than regular cigarettes; thus, millions of smokers used them throughout the 1970s (ASH, 2003: 3; Parascandola, 2005). This shift was backed by the pioneering researcher Russell, who suggested that altering the ratio of tar to nicotine in cigarettes could be the option to safer smoking, specifically a low tar, medium-nicotine cigarette (Russell, 1976: 1431).

Nevertheless, studies found that switching to low tar and nicotine, or light cigarettes, did not reduce the harm from smoking; this was due to the 'compensating behaviour', where smokers take deeper puffs from smoking or smoke more (Djordjevic, 2004: 186; Elam and Gunnarsson, 2012: 142). Several products have been introduced by the tobacco

industry claiming to reduce harm by reducing the amount of cancer-causing substances. Examples of such products include: a modified cigarette containing reduced levels of carcinogens; a cigarette made with genetically modified nicotine-free tobacco; technological delivery devices that resemble cigarettes and reduce tobacco toxicity due to heating the tobacco instead of burning it; and smokeless tobacco products, with reduced or eliminated cancer-causing agents (Djordjevic, 2004: 199; Centers for Disease Control and Prevention (US), 2010). However, all cigarette substitutes proved to be non-beneficial to smokers, did not reduce the harm to health and were considered by some to be a 'public health disaster' (ASH, 2003: 3; Gartner and Hall, 2010).

New Tobacco Control Policies

In 1998, the Department of Health (DOH) in England published the White Paper, 'Smoking Kills', which set out specific measures to reduce the number of premature deaths caused by smoking and to prevent the uptake of smoking. This led to the establishment of the National Health Service (NHS) Stop Smoking Services to support smokers who were motivated to quit (DOH, 1998, Chapter 4; McNeil et al., 2005; Bauld et al., 2010). Over the years, a variety of tobacco-control policies were implemented such as a ban on tobacco advertisements, increasing the price of tobacco, and the 'Smokefree' Legislation, which was introduced in 2007 and imposed a ban on smoking in workplaces and all enclosed public places throughout the UK (ASH, 2015g). Nicotine replacement therapies became a core part of the treatment plan offered to clients, besides the behavioural support, at the Stop Smoking Services, with the emphasis on the abrupt quitting as the only effective approach to stop smoking, as well as a specified short-term supply of nicotine replacement therapies (DOH, 1998, Chapter 4; Raw, McNeill and West, 1998; NICE, 2008: 25, 26; Rooke, 2013). Evidence from research (Stead and Lancaster, 2012; Kotz, Brown and West, 2014) and Public Health England (PHE) argued that the most effective way to stop smoking is a combination of behavioural support and medications that are offered across the Stop Smoking Services in England. West, McNeill and Raw (2000: 987) stated that these interventions delivered 'are an extremely cost-effective way of preserving life and reducing ill health'. PHE suggested that 'the problem is that few smokers access these services, limiting their impact on population health' (McNeill et al., 2015: 46).

Although the role of nicotine in causing and treating smoking dependence became widely accepted among tobacco public health programmes, evidence of the effectiveness of nicotine has been challenged. Some evidence indicates that nicotine replacement therapies are an effective intervention in achieving sustained smoking abstinence (Moore et al., 2009; Kamerow, 2012). One systematic review concluded that nicotine replacement therapies can increase the chance for smokers who make a quit attempt to successfully stop smoking by 50-70%, regardless of the setting and independent of the counselling support (Stead et al., 2008). On the contrary, another meta-analysis research found that less than 7% of smokers had achieved six months sustained smoking abstinence when using nicotine replacement therapies (Moore et al., 2009). Other evidence put into question the effectiveness of these therapies to successfully prevent a relapse (Alpert, Connolly and Biener, 2012). It was claimed that nearly all population level studies since 2000 concluded that nicotine replacement therapies were no more effective than quitting without them (Polito, 2012). Nicotine replacement therapies, as some scholars noted, lack high levels of efficacy in real-life settings and fail to achieve a sustained impact on smoking prevalence (Casella, Caponnetto and Polosa, 2010; Chapman and MacKenzie, 2010). Pharmaceutical nicotine, it was suggested, proved to only partially relieve tobacco craving. Two reasons for this were suggested. First, craving can be prompted by different factors such as the smell of smoke, seeing other people smoking and tobacco advertisements. Second, other substances in cigarettes might reduce craving (Henningfield and Benowitz, 2004: 133). Other anti-craving treatments were introduced later in the Stop Smoking Services such as Bupropion and Varenicline (Champix). However, some authors argue that the level of the available evidence of the effectiveness of all these medications is low (Molimard, 2013).

Some studies showed that willpower has a major role in achieving successful quitting. For example, lack of willpower was identified in a survey of smokers' and non-smokers' physicians to be the main barrier to quitting, followed by addiction and, lastly, the social environment (Pipe, Sorensen and Reid, 2008). Also, in Bottorff et al.'s study (2009), it was noted that willpower, self-reliance and autonomy were mostly prominent in the men's quitting stories. Similarly, a systematic review of qualitative studies on pregnant women found lack of willpower to be a major barrier to quitting (Ingall and Cropley, 2010). Moreover, in a qualitative study that investigated the perceptions and experiences of

quitting in two disadvantaged areas in Scotland, it was noted that nicotine replacement therapies were viewed to be unhelpful without willpower, which was considered to be important in maintaining long-term cessation (Wiltshire et al., 2003). Similarly, in Rooke, Cunningham-Burley and Amos's (2015: 61) study, many participants 'emphasised the role an individual's "mindset" or "willpower" played in quitting smoking'.

However, the role of pharmaceutical aids in quitting continued to grow. Russell (1991: 654) promoted the use of pharmacological nicotine on a long-term basis rather than a temporary basis and called for the continuing production of nicotine replacement products that are as 'palatable and acceptable [to smokers] as possible', and to make them readily available to users without prescription (Russell, 1991: 656). In 2007, the RCP published a report, *Harm reduction in Nicotine Addiction*, which proposed the application of harm-reduction strategies to tobacco dependence. The report suggested that marketing 'effective, affordable, socially acceptable, low-hazard nicotine products' to smokers as alternatives to tobacco could significantly improve health. Smokers, it was suggested, can stop smoking tobacco, 'without having to stop using the nicotine to which they are addicted' (RCP, 2007; 2016: xi). Elam and Gunnarsson (2012: 151) argue that the anti-tobacco movements have played a role in hindering the progression of such harm reduction approaches, as their main aim has been to eliminate all kinds of nicotine use. I will now explain why, in spite of the declines in smoking rates, it is argued that a harm reduction approach should be part of tobacco control in the UK.

Why is it argued that a harm reduction approach should be part of tobacco control in the UK?

In the UK, it is recognised that smoking is still the largest avoidable cause of premature death, disability and social inequalities in health. Currently, there are still nearly nine million smokers in the UK, a high proportion of whom are from the most disadvantaged groups in society (BMJ, 2016). It has been argued that there is a 'strong inverse social gradient in smoking' in the UK (Thirlway, 2016: 107). Over the years, inequalities in smoking rates have increased as the decline in smoking rates have been slower or non-existent among low socioeconomic status (SES) groups (Hiscock et al., 2012; McNeill and Munafò, 2013; BMJ, 2016). A review conducted by Hiscock et al. (2012) found that smoking prevalence is higher among disadvantaged groups. For example, it was reported that in England, 25% of those

whose current or most recent occupation is manual, smoke, compared with 16% of non-manual groups (Robinson and Lader, 2009). In 2015, 12% of adults in managerial and professional occupations smoked compared with 28% in routine and manual occupations (ASH, 2017). Similarly, when other socioeconomic measures were used (like income, housing tenure, car availability, economic status, lone parenting and neighbourhood deprivation), it was found that smoking prevalence differences are significant in England (Amos et al., 2011). Evidence also suggests that there is a cumulative effect of disadvantage. For example, one study analysed anonymised data for over 2 million patients from The Health Improvement Network (THIN) database in the UK. It found that the highest smoking prevalence occurred in localities characterized by single-parent households living in public rented accommodation with little community support, having no access to a car, with few occupational qualifications and a behaviour of high TV-viewing (Sharma, Lewis and Szatkowski, 2010). It was also reported that smoking during pregnancy is still common, and in some areas in the UK, 'the gap in smoking prevalence between deprivation areas is larger in the pregnant population', where the reduction in smoking is less in the most deprived areas than in the least deprived areas (Shipton et al., 2009: b4347). In addition, there is evidence that disadvantaged smokers might face higher exposure to harm inflicted by tobacco use. It was found that those from greater economic deprivation groups show higher levels of cotinine concentration (the most commonly used objective identifier of smoke intake) than those from more affluent groups, even after adjusting for daily cigarette consumption (Fidler, Jarvis, Mindell and West, 2008). Furthermore, it was found that people with low SES are more likely to take up smoking, but are less likely to succeed in their quit attempts, despite being as likely to try to quit as other smokers (Kotz and West, 2009; Hiscock et al., 2012).

Scholars argue that while effective tobacco control measures for reducing smoking prevalence exist, there is a need to focus on interventions that could reduce socioeconomic inequalities in smoking (Hiscock et al., 2012; Hill, Amos, Clifford and Platt, 2014). Over the years, several tobacco control measures have been adopted and applied, in the UK and around the world, to combat smoking on a population and individual level. On a population level, measures include: increasing the price of cigarettes; mass media campaigns; smoke-free legislation; social marketing, restrictions on marketing; combating smuggling; smoke-

free homes interventions and financial incentives. On an individual level, measures include: combined behavioural and pharmacological support; brief interventions; behavioural or pharmacotherapy only; quit lines; incentives and other types of support. Lorenc, Petticrew, Welch and Tugwell (2013) conducted a rapid overview of systematic reviews to identify evidence on 'intervention-generated inequalities' by socioeconomic status in high-income countries. They found that structural workplace interventions, provision of resources and fiscal interventions, such as tobacco pricing, show some evidence of reducing health inequalities. However, they found that media campaigns and workplace smoking bans show some evidence of increasing inequalities. Hiscock et al. (2012) provided evidence that among population-level interventions, increasing the price of cigarettes was the policy most likely to reduce the high level of smoking among disadvantaged smokers. It was suggested that certain types of mass media campaigns that are tailored to low SES smokers have a positive equity effect. Other evidence suggested that comprehensive smoke-free legislation removes inequalities by protecting from second-hand smoke. Among individual-level interventions, strong evidence showed that combined behavioural and pharmacological support can have a positive influence on smoking inequalities if they effectively targeted smokers from low SES groups (Hiscock et al., 2012). However, an updated and expanded review of a previous systematic literature review (Hill, Amos, Clifford and Platt, 2014: e89) confirmed that the increased pricing of tobacco is the intervention with 'the greatest potential to reduce socioeconomic inequalities in smoking'. It also showed that non-targeted smoking cessation programmes have a greater effectiveness among high SES and hence seem to have a negative equity impact on socioeconomic status inequalities in smoking. However, the study also confirmed that for other interventions, evidence on the equity impact is inconclusive.

Some scholars argue that if current trends in smoking prevalence continue, even with the implementation of tobacco control measures, millions of smokers will continue to get smoking-related diseases and die as a direct result of their smoking habit. That is why practices of harm reduction are gaining a deeper support among experts and within the field of tobacco control. Some experts advise that, combined with the prevention and cessation approaches, 'harm reduction, under appropriate regulatory oversight, has the capacity to have a significant and immediate impact on reducing the death and disease currently

caused by tobacco use' (McNeill and Munafò, 2013: 17). Furthermore, it has been proposed that for those smokers who are unable to quit smoking and those who are the most addicted to nicotine, harm reduction strategies such as 'the continuing use of nicotine in the form of the e-cigarettes might be a solution' (Gartner, Hall and Borland, 2012; Benowitz, 2014; Chapman, 2014; Thirlway, 2016: 107). Given that those who are most addicted to nicotine are usually from the most disadvantaged groups in society, it has been suggested that harm reduction approaches have the potential to reduce inequalities (Purcell, O'Rourke and Ravis, 2015). It is argued that electronic cigarettes seem to 'have the potential to contribute to reducing death and disability caused by Britain's biggest killer' (BMJ, 2016). This notion has been supported by Public Health England who highlighted e-cigarettes' potential to address the challenge of health inequalities, stating that these devices 'potentially offer a wide reach, low-cost intervention to reduce smoking and improve health in these more deprived groups in society where smoking is elevated' (McNeill et al., 2015: 40). A shift to applying a harm reduction strategy in England has been identified since 2011, as I will explain next.

A Shift to Applying a Harm Reduction Strategy

In 2011, the new tobacco control strategy for England incorporated 'New approaches to help tobacco users who cannot quit to instead use safer sources of nicotine' (DOH, 2011: 36; NICE, 2013a: 10). Here, a shift towards applying harm reduction strategies is evidenced by recognising smokers who are unable to quit and introducing new measures to help them. Indeed, NICE guidelines explained that smokers can reduce the harm of smoking for themselves and for the people around them in four ways: by stopping smoking altogether, cutting down prior to quitting, smoking less, or abstaining from smoking temporarily. NICE guidelines further state that: 'it is safer to use licensed nicotine-containing products than to smoke' and note that 'there is a reason to believe that lifetime use of licensed nicotine-containing products will be considerably less harmful than smoking' (NICE, 2012b: 4; 2013a: 10). The UK Medicines and Healthcare products Regulatory Agency (MHRA) approved an extension to the indication of nicotine replacement therapies to include 'harm reduction'. Particular nicotine replacement therapies were extended 'for use as a complete or partial substitute for smoking', both for those making an attempt to quit and those not currently intending to make a quit attempt but who wish to reduce smoking, 'without any restriction

on its duration of use' (MHRA, 2010). Such approaches have been described as having 'the potential to lead to one of the greatest public health breakthroughs in human history by fundamentally changing the forecast of a billion cigarette-caused deaths this century' (Sweanor, Alcabes and Drucker, 2007: 74; Rodu, 2011).

However, not all scholars and public health personnel support the harm-reduction approach, with some empirical and moral objections documented in the literature opposing its implementation. Harm reduction generated criticism of the possible dangers, such as: maintaining the use of a drug in society, prolonging, or preventing, quit attempts, and encouraging new people to use tobacco products (RCP, 2007: 204). Notions of individual choice, as well as calls for reducing smoking rather than quitting, it was argued, serve to negate public health interventions and legitimatise the existence of the tobacco industry in the marketplace (White, Oliffe and Bottorff, 2013). Also, scholars highlighted the challenges in communicating harm-reduction messages without undermining the complete withdrawal from nicotine and cessation measures, or diluting the notion that smoking is dangerous. Such measures have emphasised that smoking is unsafe and opposed all nicotine or tobacco product use, and that indeed has been at the core of tobacco control programmes to date (RCP, 2007: 204; de Andrade, Hastings and Angus, 2013). Coxhead and Rhodes (2006) argued that contemporary public health risk management of smoking behaviour emphasises individual choice and agency as key risk management solutions in relation to smoking, and considers those who embrace risk behaviours to be failures of risk management and citizenship (Petersen, 1997). Thus, new public health programmes, together with harm-reduction strategies, it has been argued, are extending the medical model in society (Armstrong, 1995; Miller, 2001; Roe, 2005). I will expand on the link between biomedicalization and tobacco harm reduction in the relevant theory chapter.

To summarise, it is well-accepted by policymakers and health regulators in the UK that, although nicotine is addictive, it is not a cause of the morbidity and mortality associated with smoking. Moreover, the new tobacco control policies are taking into consideration the difficulty of quitting smoking abruptly; therefore, they have proposed alternative approaches besides quitting and recommended the use of less harmful forms of nicotine delivery to reduce the harm of tobacco use (NICE, 2013a, b). The extension of nicotine replacement therapies to include harm reduction has paved the way for electronic

cigarettes into the field of tobacco harm reduction (Keane, 2013). Next, I will introduce electronic cigarettes, the reasons for their use and their position in harm reduction.

1.4. The Emergence and Use of Electronic Cigarettes in the UK

The electronic cigarette is a battery-powered device that does not require tobacco or combustion to operate. It mainly vaporises a mixture of water, propylene glycol or glycerin, flavourings, with or without nicotine, and is activated when the user inhales through the mouthpiece of the device. Invented in 2003 by a Chinese pharmacist, it was initially designed to look like a cigarette, and was first marketed in China as an alternative to regular smoking and an aid to stop smoking. It received its first international patent in 2007 (Caponnetto et al., 2012). Most electronic cigarettes include an aerosol generator, a flow sensor, a battery and a storage area for a solution (or e-liquid). Some are disposable, while others are reusable with a rechargeable battery and refillable e-liquid container or replaceable, pre-filled cartridges (Brown and Cheng, 2014). Over the years, more brands have become available in the market with different prices, sizes, colours, weights, accessories, flavours and with variable levels of nicotine. The term 'vaping' is used to describe the act of using electronic cigarettes. Currently, there are different electronic cigarette designs and 'generations' with a range in complexity. People can choose from first, second and third-generation electronic cigarettes. The third generation does not resemble the traditional cigarette; rather, its shape varies between a screwdriver shape to a box the size of a bulky smartphone. A fourth generation was also introduced to the market late in 2015 (Martin, 2015). This study explores the perceptions of electronic cigarettes without a particular focus on a specific design, brand or components.

The electronic cigarette's popularity has increased internationally and in the UK (King et al., 2013; Adkison et al., 2013; Pepper and Brewer, 2013; ASH, 2016b). In GB, awareness, trial, and current use among adult smokers have increased over time. A survey conducted in 2015 found that 95% of smokers and 93% of non-smokers had heard of electronic cigarettes (ASH, 2016b: 2). The number of current smokers who also used electronic cigarettes increased from 2.7% in 2010 to 6.7% in 2012 (Dockrell et al., 2013), and then to 17.6% in 2014. However, between 2014 and 2015, the proportion remained at 17.6%. In 2014, it was stated that as many as 400,000 people in the UK have possibly replaced smoking with an

electronic cigarette (Britton and Bogdanovica, 2014: 8). At the same time, it was suggested that the electronic cigarette market, in the UK, increased by 340% in 2013 to reach £193 million, and it was expected to be worth £340 million by 2015 (Clarke, 2014; Bauld, Angus and de Andrade, 2014: 4). In 2015, it was estimated that the number of users of electronic cigarettes in GB reached 2.8 million, mostly made up of current and ex-smokers (ASH, 2016b: 1).

1.4.1. Reasons for Electronic Cigarettes Use

A growing body of international and national studies has investigated the reasons for electronic cigarette use. The studies' methods ranged between cross-sectional surveys (e.g. Etter, 2010; Etter and Bullen, 2011; Foulds, Veldheer and Berg, 2011; Siegel, Tanwar and Wood, 2011; Dawkins et al., 2013; Adkison et al., 2013; Vickerman et al., 2013; Goniewicz, Lingas and Hajek, 2013; Farsalinos et al., 2014; Richardson et al., 2014; Hummel, et al., 2015; Pepper et al., 2015; Rutten et al., 2015; Berg et al., 2015); qualitative interviews (McQueen, Tower and Sumner, 2011; Barbeau, Burda and Siegel, 2013; Sherratt et al., 2015a; Rooke, Cunningham-Burley and Amos, 2015; Measham, O'Brien and Turnbull, 2016); longitudinal surveys (Etter and Bullen, 2014; Biener and Hargraves, 2014; Brose et al., 2015a,b); case reports (Caponnetto et al., 2011a); observational (Polosa et al., 2011) and systematic reviews (Pepper and Brewer, 2013; McRobbie et al., 2014; Farsalinos and Polosa, 2014; Burstyn, 2014; Pisinger and Døssing, 2014).

The documented reasons for using electronic cigarettes include: users' perceptions that electronic cigarettes are less harmful than tobacco to users and bystanders; to quit smoking; to cut down smoking; to deal with tobacco withdrawal symptoms and avoid relapse; an alternative to smoking, where smoking is banned; and because they are found to be cheaper than cigarettes. Electronic cigarettes appeal to users because of their tobacco-free smell, social acceptance, innovative design, varied flavours and the ability to be customised. Some people use them as a hobby and one study found that young people used electronic cigarettes primarily for flavour combinations and to perform 'tricks' (Measham, O'Brien and Turnbull, 2016). In general, it was noted that, across different populations, the top endorsed reasons for using electronic cigarettes were to help stop smoking and harm reduction (McNeill et al., 2015: 53).

Several studies addressed the use of electronic cigarettes in the UK. Some data were obtained from worldwide surveys (e.g. Etter and Bullen 2011; Farsalinos et al., 2014; Adkison et al., 2013). For example, Adkison et al. (2013) collected data from Wave 8 of the International Tobacco Control Four-Country Survey between July 2010 and June 2011. There were 1,325 participants from the UK. It was found that the main reasons for electronic cigarettes use were to help reduce smoking and quit smoking. Also, Dawkins et al. (2013) conducted an online survey of 1,347 respondents from 33 countries (23% from the UK). It was found that electronic cigarettes were used primarily for smoking cessation, but for a longer duration than nicotine replacement therapies, and users believed them to be safer than smoking. National studies have similar findings; for example, the Smoking Toolkit Study (STS) monthly household surveys have shown that the electronic cigarette has become the most common aid that smokers, in England, use to help them stop smoking (West, Beard and Brown, 2016). Also, in an Internet cohort GB survey, which was carried out in 2012, 2013 and 2014, it was noted that approximately 80% of current users at all three time points mentioned that the main reasons for using electronic cigarettes were: 'health, to cut down and to quit smoking' (McNeill et al., 2015: 53). Similarly, in the ASH Smokefree GB adult 2015 survey, the results showed that ex-smokers stated using electronic cigarettes to help them stop smoking completely and to help them keep off tobacco. The main reasons given by current vapers who were still smoking were to help them reduce the amount of tobacco they smoke and to help them stop smoking entirely. Among those who no longer use electronic cigarettes, nearly half said they used an electronic cigarette simply to give it a try. Other reasons were to save money as it was cheaper than tobacco and to avoid the risk of second-hand tobacco smoke (ASH, 2016b). To conclude, in the UK, electronic cigarettes are used 'primarily as an aid to cutting down or quitting smoking' (ASH, 2016a).

However, electronic cigarettes have created a controversy among professionals in medicine and public health, and in wider society. It was stated that: 'Harm reduction, and in particular the role of e-cigarettes, has probably split global and, to some extent, national opinion on tobacco control more than any other issue' (RCP, 2016: 3). This thesis addresses this controversy. Next, I begin to discuss the controversy of the electronic cigarette's position in the worlds of addiction and harm reduction.

1.4.2. Electronic Cigarettes and Harm Reduction

This section will introduce the reasons which underlie the controversy that the electronic cigarette has created and the debate that surrounds its position in harm reduction.

In their discussions on the matter of electronic nicotine delivery systems (ENDS), including electronic cigarettes, the WHO highlighted that ‘the role of ENDS is not clearly established: they are perceived in some quarters as smoking cessation aids, and in others as a starter or dual-use (to maintain nicotine addiction) product’ (WHO FCTC, 2012b: 8). The electronic cigarette’s advocates view the electronic cigarette as an expansion for the use of pharmacological nicotine that is believed to have a pivotal role in eliminating smoking-related diseases. They consider electronic cigarettes a breakthrough in public health history and harm reduction development (Britton and McNeill, 2013; Hajek et al., 2014; Nicotine Policy, 2014). However, opponents warn that the electronic cigarette’s safety, quality and long-term use has not been established fully and, therefore, oppose its promotion (Chapman, 2014; Centre for Tobacco Control Research and Education, 2014). Also, concerns were raised that electronic cigarettes might glamorise smoking and provide an entryway (gateway) for recruiting more people (the younger generation, in particular) to become addicted, by creating a new culture of vaping. This might result in maintaining nicotine addiction in society, promoting continued smoking and, thus, preventing smokers from quitting or deterring them from using existing, effective cessation aids (Cobb and Abrams, 2011; de Andrade and Hasting, 2013; Chapman, 2014). I will expand on the risks attributed to electronic cigarettes in the second chapter. Next, however, I introduce an important concept for this thesis, which is the classification of ‘good’ nicotine and ‘bad’ nicotine. This is important because the circulated perceptions of electronic cigarettes mainly stem from this categorisation.

‘Good’ and ‘Bad’ Nicotine

Scholars Bell and Keane (2012: 245) believe that the controversy of electronic cigarettes originates from ‘the ideological challenge they pose to the binary categorisation of nicotine into not only remedial and harmful forms, but morally “good” and “bad” ones.’ ‘Good’ nicotine, they suggest, represents nicotine that does not connote smoking and is used in a medical form for treatment purposes, as opposed to ‘bad’ nicotine that is used as a

recreational habit (Bell and Keane, 2012: 245). They discussed nicotine replacement therapies which, since their emergence, were described, perceived and marketed as ‘medicine’ that ‘cures’ smokers of their nicotine addiction (p: 245). Hence, they are seen as ‘good (health-promoting)’ products (Keane, 2013: 190), and nicotine in nicotine replacement therapies is considered ‘good’ ‘because it weans smokers off the “bad” nicotine in cigarettes and ideally nicotine itself’ (Bell and Keane, 2014: 50). However, nicotine becomes ‘bad (health-destroying)’ nicotine if smokers shift their nicotine addiction from cigarette to nicotine replacement therapies (Bell and Keane, 2014: 50; Keane, 2013: 190). Therefore, these scholars argued that nicotine replacement therapies only maintain their legitimacy as long as they treat nicotine addiction, ‘rather than perpetuating it’ (Bell and Keane, 2012: 246). Similarly, Elam argued that the invention of nicotine replacement therapies provided evidence of a difference between the “good’/right nicotine’ and the “bad’/wrong nicotine’ and brought ‘alternative paths leading us in and out of injurious temptation’ (Elam, 2012: 61). Elam and Gunnarsson (2012: 138) produced a similar argument when they discussed the Swedish invention of ‘medicinal nicotine’ – the smokeless oral tobacco (snus) – to cure smokers’ addiction. The success of medicinal nicotine in Sweden, Elam and Gunnarsson suggested, has opened up the possibility of what they have called an advanced liberal response to the problem of smoking; thus, promoting advances in the nicotine market, which offer ‘good/clean’ nicotine to consumers as a form of harm reduction. The power of consumerism and marketing are important factors in my research and I will expand later on their influence on electronic cigarettes.

Is the Electronic Cigarette Good or Bad Nicotine?

The questions that arise as a consequence of the above argument are: How is the electronic cigarette different to nicotine replacement therapies? And why is it received differently? Electronic cigarettes were described as novel devices that ‘deliver nicotine without the harmful toxins found in tobacco smoke’ (ASH, 2010; 2013). The nicotine inside them was described as ‘pharmaceutical-grade nicotine’ (HL Grand Committee, 17 Dec 2013). Scholars argue that the resemblance of the electronic cigarette to a traditional cigarette is the main reason for the hostility projected towards electronic cigarettes. Electronic cigarettes have several characteristics that are similar to traditional cigarettes, such as: the hand to mouth actions, behavioural rituals, inhaled sensory stimulus and the different range of flavours

(RCP, 2016: 70). Bell and Keane (2012: 245) pointed at the visual similarity of smoke, in particular, as 'perhaps, the most powerful semiotic referent of the cigarettes'. Smoke, they believe, is a 'signifier of smoking' and, hence, is seen by mainstream tobacco control as a threat to their historical efforts to denormalise tobacco through eliminating the visibility of the smoking behaviour. These efforts were culminated by enforcing the Smokefree legislation and restricting tobacco marketing and advertising.

Public health and tobacco control policies have been focusing on separating the two worlds of 'good'/medicinal nicotine and 'bad'/recreational nicotine. Nicotine replacement therapies act as a substitution for the bad nicotine in a cigarette with the good nicotine. Hence, nicotine replacement therapies, it has been argued, 'enabled nicotine to be assembled as not only a therapeutic medicine but a safe consumer product' (Keane, 2013: 191). Nicotine replacement therapies do not resemble smoking; they are traditionally used to temporarily substitute smoking without the intention of maintaining an addiction, and they act as a therapeutic agent which functions against, rather than for, the continuation of smoking (Keane, 2013: 194). Although extending nicotine replacement therapies to be used for harm reduction on a long-term basis can maintain nicotine addiction, their position in harm reduction is well-established and is not controversial, like electronic cigarettes. This is because the use of nicotine replacement therapies is, mostly, discreet and does not threaten the denormalisation policies. Also, it is recognised that many smokers find nicotine replacement therapies unsatisfactory as long-term substitutes for smoking (RCP, 2016: 7). On the contrary, electronic cigarettes have the potential to permanently replace cigarettes (Bell and Keane, 2012: 245). This is because vaping is placed within the discourses of recreation and pleasure, as well as within reducing harm (p: 246); also, because the electronic cigarette's ability to imitate features of smoking is making it a popular and effective substitute to smoking (RCP, 2016: 70).

Therefore, electronic cigarettes, it is noted, 'expose the artificial boundaries placed upon "good" and "bad" nicotine' (Bell and Keane, 2012: 246). Electronic cigarettes may produce a new realm where consuming nicotine, in a form that resembles smoking, can coexist with the public health agenda, which works against the visibility of any smoking-like behaviour and separates addiction and enjoyment (Bell and Keane, 2012: 245, 246; de Andrade, Hastings and Angus, 2013). Indeed, the RCP accepted that the electronic cigarette

can be an 'ideal tobacco harm-reduction product' (2016: 63), and that: 'Unlike NRT [nicotine replacement therapies], e-cigarettes are not medicalised, and their use does not imply rejection of smoking or a commitment to quitting' (p: 101). Until recently, in the UK, all electronic cigarettes were sold under the General Products Safety Directive as a less harmful substitute for traditional cigarettes (de Andrade and Hastings, 2013). From May 2016, an electronic cigarette that contains less than 20 mg/ml of nicotine and that has not sought medicinal regulations comes under the European Commission's revised Tobacco Products Directive (TPD) and will be regulated as a consumer product. However, an electronic cigarette containing more than 20 mg/ml of nicotine, or which makes smoking cessation claims, is prohibited unless it has a medicinal license by the MHRA (ASH, 2016a). These regulations are important changes in the history of tobacco control in the UK. They imply a shift from the historical stance of tobacco harm reduction to eliminating the consumption of nicotine, and indicate the acceptance of the electronic cigarette as a harm-reduction product by UK regulators. It also indicates a move towards accepting the use of nicotine on a non-medical/recreational basis.

To conclude, electronic cigarettes' position within harm reduction is controversial. Although nicotine replacement therapies claimed their position in the worlds of 'good'/medicinal nicotine rather than 'bad'/recreational nicotine, electronic cigarettes' vague identity places them in both worlds simultaneously. It is this dilemma that I am interested in exploring in the context of this thesis. Whilst advocates view an electronic cigarette as a good nicotine delivery device and a promising advance in tobacco policies, its effects and implications, at the individual and population level, should be evaluated and put into perspective. Therefore, it is important to explore electronic cigarette use and efficacy in different populations and various settings. My study took place at the time before the introduction of the new electronic cigarette regulations in 2016, when controversy and confusion about electronic cigarettes were evident among different groups, including stop smoking advisors and electronic cigarette users. Exploring the different perceptions in the two data sources allows for a deeper understanding of how the phenomenon of electronic cigarettes has developed over time. Obviously, these perceptions are influenced by the wider economic, cultural and social factors. Hence, first I explore the institutional influences through discussing how the Stop Smoking Services received electronic cigarettes, while the

debate was still continuing among leading health organisations. Second, I present an overview of the influences of the tobacco industry, marketing and the media on electronic cigarettes.

1.4.3. The Position of Electronic Cigarettes in the Stop Smoking Services

Brief History

To understand the position of electronic cigarettes in the Stop Smoking Services, it is important to provide an overview of the main role of the Stop Smoking Services. These are 'a locally managed and co-ordinated service[s] commissioned to provide accessible, evidence-based, cost-effective clinical services to support smokers who want to quit' (DOH, 2011: 110).

These services provide their support through trained personnel, such as specialist stop smoking advisors, trained nurses and pharmacists, who discuss and agree on the treatment option with each client (Bauld et al., 2010; HSCIC, 2015: 4). In 2008, the DOH established the National Centre for Smoking Cessation and Training (NCSCT) to provide support for the local Stop Smoking Services in delivering smoking cessation programmes, and to deliver training and assessments to stop smoking advisors and healthcare professionals (West et al., 2013; NCSCT, 2016). All stop smoking advisors are required to be NCSCT certified, have received training that meets the NCSCT published standards and are employed by a commissioned Stop Smoking Service provider (DOH, 2011: 110).

Since their inception, the aim of the Stop Smoking Services has been to help smokers achieve abrupt quitting with a specific time frame and a controlled supply of medications. Once clients consent to treatment and set a quit date – usually in the first session - they participate in weekly sessions of structured interventions and receive behavioural support and offers of pharmacotherapy (DOH, 2011: 112). The currently available smoking cessation medications include: nicotine replacement therapies, Bupropion and Varenicline. Nicotine replacement therapies are offered for 8-12 weeks before reducing the dose, then stopping their use. Four-week quit-smoking rates are used as the local measure to reflect smoking prevalence and the effectiveness of the smoking cessation service (Bauld et al., 2010; DOH, 2011; NCSCT, 2014).

Perceptions and Reception of Electronic Cigarettes within the Stop Smoking Services

The emergence and increased popularity of electronic cigarettes have created a challenge for the Stop Smoking Services. This is because the services saw a rise in the number of smokers who use electronic cigarettes and clients who enquire about them. At the same time, there were no clear guidelines and insufficient conclusive evidence available to the advisors to present to their clients. Few studies have addressed the issue of electronic cigarettes within the Stop Smoking Services in the UK. For example, Hiscock et al. (2014) conducted two online surveys, in 2011 and 2013, of the UK smoking cessation practitioners; they found that participants were concerned about electronic cigarettes' safety, or their efficacy for smoking cessation, and were worried that smokers may become dependent on electronic cigarettes. Practitioners pointed at the possibility that electronic cigarettes may weaken smokers' willingness to use evidence-based stop smoking methods, and challenged denormalising tobacco smoking policies. Respondents were also concerned about marketing electronic cigarettes that look like cigarettes. In both surveys, most practitioners were not positive about electronic cigarettes. Electronic cigarettes were perceived as promoting the continuation of smoking and there were concerns about the impact of electronic cigarettes on young people, echoing concerns previously highlighted.

Beard et al. (2014) conducted an online survey of 58 managers and 1,284 practitioners between December 2012 and January 2013. The majority of the practitioners reported that their clients were using electronic cigarettes and that they had been asked about them. It was found that some practitioners provided non-evidence-based advice. Their advice reflected the different risk perceptions of electronic cigarettes that practitioners held. These perceptions included: the electronic cigarette is an unsafe product; it maintains addiction; it is safer than a cigarette; they don't know enough about it to give advice; it maintains hand to mouth action; it can be used for harm reduction and smoking cessation and it normalises smoking. Hence, it was suggested that there was a need to consider further training for practitioners on electronic cigarette use and harm reduction, in order to ensure that the advice given was consistent and evidence-based.

The authors also highlighted that, following the regulatory changes to electronic cigarettes and the announcement of NICE guidance on harm reduction in 2013, there was a need to determine the role played by Stop Smoking Services. It was noted that there was a

need to ensure Stop Smoking Services adhere to the guidelines given. Previous studies showed that only 60% of the content of stop smoking manuals, provided to practitioners, was communicated with reliability in practice (Lorencatto et al., 2013). One proposed reason for this is that healthcare professionals' personal beliefs might conflict with the evidence-based guidelines, and influence the advice they provide to clients. For example, previous research showed that some healthcare professionals held inaccurate views about nicotine-containing products and harm reduction and that these beliefs were associated with the advice they offered to smokers (Beard et al., 2012). Therefore, it is important to explore the beliefs and views of stop smoking advisors and to discover the advice they provide and the processes of dealing with electronic cigarette users within the service. This study took place at a transition period of the history of tobacco control in England, and will address the gap in the literature with regards to the perceptions that stop smoking advisors held of electronic cigarettes in two Stop Smoking Services in South East England.

Latest Guidelines to Stop Smoking Advisors

Recently, NICE provided the following advice to Stop Smoking Services about nicotine-containing products, including electronic cigarettes:

Tell people that some nicotine-containing products are not regulated by the Medicines and Healthcare products Regulatory Agency (MHRA), and so their effectiveness, safety and quality cannot be assured, but that these products are likely to be less harmful than cigarettes. (NICE, 2016b)

PHE stated that 'stop smoking services should support smokers using electronic cigarettes to quit by offering them behavioural support' (McNeil et al., 2015: 6). In a briefing produced in 2016, in partnership with PHE, the NCSCT acknowledged that electronic cigarettes: 'are considerably safer than smoking cigarettes, are popular with smokers and that they have a role to play in reducing smoking rates' (NCSCT, 2016: 4). The briefing provided advice on the practical elements of dealing with electronic cigarette users who use the services and recommended that:

Stop smoking services should be open to e-cigarette use in people keen to try them to help them quit. This is especially so in those who have tried and failed to quit using licensed stop smoking medicines. (NCSCT, 2016: 38)

The NCSCT advised the advisors not be 'alarmed about recreational nicotine'. They asserted that it is a choice that some people make, and that it is not 'the business of stop smoking services to make judgements' about this choice. They also highlighted that the service is not a 'stop nicotine service' and encouraged the practitioners to listen to electronic cigarette users' experiences and acknowledge the usefulness of electronic cigarettes in helping them to stay off tobacco (NCSCT, 2016: 11). The NCSCT, however, emphasised the role of 'expert support from stop smoking services' for 'the best chance of quitting' (NCSCT, 2016: 38).

To date, the electronic cigarette is not offered as a treatment option similar to other available treatments by the Stop Smoking Services. However, some trials have been conducted to assess its usefulness within the service. For example, a pilot study, which included offering free electronic cigarettes with a 4-week supply of refills, was conducted in one routine Stop Smoking Service in the City of London (Hajek et al., 2015). Sixty nine smokers accepted using electronic cigarettes, while 31 smoker did not accept. The study found that 65% of smokers who accepted using electronic cigarettes achieved abstinence at four weeks; of those, smokers who used Varenicline and electronic cigarettes had a higher success rate (85%) than smokers who used electronic cigarettes only (54%). Of smokers not accepting the offer of the electronic cigarettes, 45% were abstainers at four weeks. Both services included in my study (Hertfordshire Stop Smoking Service and East Sussex Stop Smoking Service) follow the recommendations of NICE and NCSCT. Hertfordshire Stop Smoking Service announced, on their website, that: 'The service supports people using e-cigarettes to help them reduce their smoking, reduce their use of the e-cigarette or to quit' (Hertfordshire County Council, 2016). East Sussex Stop Smoking Service (Quit 51) advertised in 2016 for a trial of electronic cigarettes. The study is run by a research group at a university in London, with Quit 51 Stop Smoking Service in East Sussex being chosen as one of three study sites across the country (Quit 51, 2016).

To conclude, the institutional stance on electronic cigarettes is changing. I demonstrated the existing gap between the recommendations of leading health organisations like the RCP and NICE and the policies applied in the Stop Smoking Services. However, accepting the use of electronic cigarettes and the prescribing of electronic cigarettes by some services are a sign of a transformation of tobacco control management in England. These institutional stances have an influence on the perceptions of electronic

cigarettes; they are part of the contextual factors which shape, and are shaped by, the diverse perceptions of electronic cigarettes. Next, I will provide an overview of other influential social and cultural factors: tobacco industry, marketing and the media.

1.4.4. The Influences of the Tobacco Industry, Marketing and the Media on Electronic Cigarettes

The social, political and institutional context will inevitably have an influence on the public opinion and use of electronic cigarettes. In this section, I shed light on the role of the tobacco industry, marketing strategies and the media on electronic cigarettes. This will enable me to unravel some of the key contextual trends which have influenced the development, discourse and perceptions of electronic cigarettes among my two data sources. The emergence of electronic cigarettes, it was argued, has created a “moral quandary” (The Lancet, 2013). One reason is the physical and behavioural resemblance to smoking a cigarette, as I discussed above. The other reasons are: the use of promotional images and messages to advertise for electronic cigarettes, similar to those used in the past to promote traditional cigarettes, as well as the growing involvement of the tobacco industry in manufacturing and marketing electronic cigarettes. I expand on this next.

Brief History of the Tobacco Industry

The history of the tobacco industry in arguably misleading public opinion about the harm caused by tobacco use was discussed in the literature (Koop, 2004; Daynard, 2004; Glover, 2006; Doward, 2013; Godlee et al., 2013; US DHHS, 2014; ASH, 2015d). Many scholars believe that Big Tobacco (tobacco industry) was responsible for tobacco addiction and for ‘decades of deceit and actions that cost millions of lives’ (Brownell and Warner, 2009: 259). They were described as:

notorious masters of deception; they know how to manufacture ignorance and rewrite history. They know the power of images and how to twist these to violate common sense and pulmonary civility. They also know how to engineer desire, and, of course, they’d like us to believe they don’t want youngsters to smoke. (Proctor, 2011: prologue)

The tobacco industry is believed by some scholars to be equipped with persuasive marketing strategies, good public relations and strong political influence. It is argued that

this enabled them to manipulate data, falsify facts and mislead the public by creating doubt and challenging the scientific evidence that proves the harms of smoking and passive smoking (Godlee et al., 2013). Proctor was the first historian to analyse the industry's internal documents extensively. In his book, *Golden Holocaust* (2011), Proctor examined the ways in which the US tobacco industry funded research and drew in big universities and experts in different disciplines. He drew attention to the infiltration and manipulation of scientific research and concluded that tobacco money had influenced 'evidence-based medicine' (Proctor, 2011: 459). Moreover, it is argued that tobacco companies are adamant in attempting to get people hooked on using any tobacco products, including smokeless tobacco, to guarantee a user for life (Glover, 2006). Indeed, the implementation of effective policies proved to be a challenging and lengthy process. This is because the tobacco industry, it is argued, constantly acted to counteract public health efforts, interfered with public health policies and hindered tobacco control work (Doward, 2013; US DHHS, 2014; ASH, 2015d). As a consequence, some scholars concluded that it is unlikely to be possible to 'negotiate morality with Big Tobacco', and unrealistic to involve them in public health programmes (Koop, 2004: xiv-xv).

The Tobacco Industry and Electronic Cigarettes

Although Berridge (2012) suggested that the influence of the tobacco industry in the UK differs from that of the US, there is a concern regarding the active interest that the tobacco industry has taken in electronic cigarettes (Hastings, de Andrade and Moodie, 2013; de Andrade, Hastings and Angus, 2013; Bauld, Angus and de Andrade, 2014). A report by the WHO concludes:

It is unclear yet what this means for the ENDS market. However, if prior interest of the tobacco industry in reduced-risk products serves as a precedent, their interest lies in maintaining the status quo in favour of cigarettes for as long as possible, while simultaneously providing a longer-term source of profit should the cigarette model prove unsustainable. In addition, selling these products is intended to bring reputational benefits to these companies, as they can pretend to be part of the solution to the smoking epidemic. (WHO FCTC, 2014b: 8)

The WHO and other scholars believe that the industry is promoting electronic cigarettes to be used in smoke-free environments, and targeting the young to create a new way of consuming tobacco and 'to ensure that consumers continue to use their products for as long as possible' (Hastings, de Andrade and Moodie, 2013: 18).

The tobacco industry has been moving to build links with public health and policymakers, as they planned to work with the MHRA to produce licensed electronic cigarettes to be marketed as an alternative nicotine delivery device (de Andrade, Hastings and Angus, 2013). Indeed, in September 2014, Nicovations, a wholly owned subsidiary of British American Tobacco plc (BAT), announced the acquisition of a medicinal licence for their product Voke, and then their E-Voke electronic inhaler in 2015 (Nicovations, 2014; MHRA, 2015). This, according to de Andrade, Hastings and Angus (2013: 3), 'is jeopardising Article 5.3 of the Framework Convention on Tobacco Control, which requires that development and implementation of public health policy should be completely protected from industry influence'. It was also revealed that several prominent brands of electronic cigarettes were purchased by tobacco companies (NCSCT, 2016: 15). As a result, ASH introduced new guidelines for health services on the best way to deal with electronic cigarette manufacturers who are part of the tobacco industry. ASH stated that the decision to prescribe any medicine should be linked to its cost effectiveness, and not to refuse to recommend a product because it is manufactured or distributed by a tobacco company (ASH, 2015d, e).

The Media and Marketing Influence

A positive picture is being painted for electronic cigarettes by the media, supported by numerous celebrities using electronic cigarettes as a new, fashionable lifestyle behaviour, showing them in movies and on television (Grana, Glantz and Ling, 2011). The public has shown great interest in electronic cigarettes and the popular media, such as the BBC and the *Guardian*, has given wide coverage to electronic cigarettes. Between January 2008 and February 2010, online searches for information on electronic cigarettes were several hundred-fold greater than searches for smoking alternatives in the UK and US (Ayers, Ribisl and Brownstein, 2011). The electronic cigarette is extensively marketed online, promoted on YouTube videos and advertised on Twitter (Yamin, Bitton and Bates, 2010; Hua, Yip and Talbot, 2013). This has contributed to the rise of the electronic cigarette's popularity and

its marketing (Herzog, Metrano and Gerberi, 2012; Kamerow, 2013). It was highlighted that some enthusiastic advocates of electronic cigarettes had formed active electronic cigarette user groups, where they share information about electronic cigarettes and argue against restricting the use of electronic cigarettes (West et al., 2014: 2). The role of the Internet in increasing awareness of electronic cigarettes is demonstrated in many surveys. For example, in an online survey with 1,347 participating electronic cigarette users from 33 countries (72% European), 41% of participants said they had become aware of electronic cigarettes via the Internet; 35% of participants had first heard of the product from a friend, and 8% had seen another person use it (Dawkins et al., 2013).

Electronic cigarettes have become increasingly available at newsagents and in supermarkets (Rooke and Amos, 2014), besides a noticeable growth in the number of independent electronic cigarette companies. To explore the influence of marketing constructions on people's perceptions of electronic cigarettes and their use, public health researchers at the University of Stirling investigated young people's exposure to electronic cigarette marketing in shops in Scotland (University of Stirling, 2016). The study involved 3,808 students between 11 and 18 years of age in four high schools. The study found there has been an increase in electronic cigarette displays on the high streets. It also found that those participants who recalled seeing electronic cigarette displays were twice as likely to have tried an electronic cigarette, or were significantly more likely to report their intention to try them. However, the study noted that most adolescents in the study who reported using electronic cigarettes were not regular users, while no association was established between noticing electronic cigarettes at the point of sale and intention to use (Best et al., 2016).

The influence of the media on shaping the meanings and use of electronic cigarettes in society was highlighted by Rooke and Amos (2014). Both scholars applied thematic analysis to twelve national UK and Scottish newspapers and the three most popular online news sources between 2007 and 2012. They aimed to explore how the meanings, uses and users of electronic cigarettes were presented, and whether and how this had changed. Both scholars used the diffusion of innovations theory to explain the use of electronic cigarettes. The theory suggests that the mass media plays an important role in creating an awareness of, and shaping people's perceptions of, innovations (Rooke and Amos, 2014: 507). The

authors noted that there was a domination of more positive representations of electronic cigarettes, which suggests that: 'the news media coverage has not only paralleled increased interest in, and use of ENDS, but may have contributed to it' (p: 511).

An experimental study looked at the impact of advertisements promoting candy-like flavoured electronic cigarettes on the appeal of tobacco smoking among 598 English school children. The authors concluded that exposure to electronic cigarette adverts does not seem to increase the appeal of tobacco smoking in their study group. However, adverts of flavoured electronic cigarettes, compared with non-flavoured ones, generated greater appeal and interest in purchasing and trying electronic cigarettes (Vasiljevic, Petrescu and Marteau, 2016).

Another marketing strategy was investigated in the US. Cobb, Brookover and Cobb (2013) analysed the relation between online electronic cigarette affiliates' advertisements and electronic cigarette sellers, and evaluated the descriptive content on advertisements and websites. 'Online affiliate marketing consists of commercial networks where "affiliates" run content websites that ultimately direct viewers to vendors ("sellers"), usually resulting in a payment from the seller back to the affiliate' (p: 1). It was suggested that, although this marketing strategy is almost invisible to most Internet users, it is growing in use, especially in the US and the UK (Prussakov, 2012). Data showed a multilevel relationship between consumers who received advertising and the seller. There were unambiguous claims of electronic cigarette smoking cessation and health benefits in both electronic cigarette advertisements and affiliate websites, but not their linked seller websites. The authors, however, concluded that their findings 'do not indicate that online ENDS affiliate marketing is always deceptive, nor do they provide any estimate of how prevalent the use of deceptive marketing for ENDS might be' (p: 3).

Concerns about media coverage, marketing and the promotion of electronic cigarettes have been expressed by institutions and researchers (de Andrade, Hastings and Angus, 2013; NICE, 2013a; Bauld, Angus and de Andrade, 2014). In a report published by ASH and entitled 'Smoking Still Kills', it was stated that the government needs to pay attention to the impact of electronic cigarettes and their expansion in the market in order to protect the long-standing achievements of tobacco control programmes (ASH, 2015c: 37). PHE warned that: 'the commercial exploitation' of electronic cigarettes was threatening the potential

‘substantial public health gains’ that electronic cigarettes may bring (de Andrade, Hastings and Angus, 2013: 2). Therefore, the importance of monitoring and regulating the electronic cigarette market was highlighted, especially to avoid the gateway risk (The Lancet, 2013; de Andrade and Hastings, 2013; Grana, 2013; Cobb, Brookover and Cobb, 2013; Rooke and Amos, 2014; University of Stirling, 2016).

On the other hand, PHE suggested that health scare stories in the media may have influenced the public perception of electronic cigarette safety and impacted the popularity of electronic cigarette use (McNeill et al., 2015: 79). There have been warnings about ‘[t]he growth of [...] false perception [about] risks’ and a call for clear communication of the ‘relative safety’ of electronic cigarettes (ASH, 2015b; West, Beard and Brown, 2016). A study from the US in 2010 showed that 82% of responders believed that vaping was safer than smoking, but that figure shrunk to 51% in 2014 (Tan and Bigman, 2014). Similarly, according to the Smoking Toolkit Study data in 2016, a minority of current smokers believed that electronic cigarettes are less harmful than cigarettes; a higher number was documented in the previous two years. The same data showed a decrease in the growth of electronic cigarettes by current smokers (West, Beard and Brown, 2016). This may be explained by changing risk perception, which I will discuss in the next chapter.

To conclude, the role of the tobacco industry, marketing strategies and the media on electronic cigarette use is recognised by researchers and institutions. This thesis explores these contextual factors and determines their influence on the construction of different circulating perceptions of electronic cigarettes. I also reveal how these perceptions can shape some of these factors.

1.5. The Rationale for Conducting this Research and Research Questions

The controversial position of electronic cigarettes is continuing among the public, various health personnel and in the political sphere (Abrams et al., 2014; O'Connor and Fenton, 2015; RCP, 2016: 7). Further, there is still a lack of data about why, how, where and with whom people use electronic cigarettes. It is suggested that more studies from different disciplines, at both individual and population level, are needed to address several ambiguous issues about electronic cigarette use (WHO, 2009: 39), with limited involvement of industry scientists to guarantee independent and impartial information (Parascandola,

2005). Similarly, there are still gaps in the research surrounding tobacco harm reduction (de Andrade and Hasting, 2013), and uncertainties about the safety of electronic cigarettes, their long-term effects and efficacy for smoking cessation (Kmietowicz, 2014). Understanding the perceptions and views that different populations hold for electronic cigarettes is important in order to form evidence-based knowledge about electronic cigarette use and development. While a large body of studies have explored the use of electronic cigarettes, as I presented earlier, to date few qualitative studies have investigated the use of electronic cigarettes. These studies ranged between health behaviour research, public health, health science and health psychology. The findings from these studies will be discussed in the next chapter.

There is a lack of sociological work exploring the use of electronic cigarettes in different populations. In order to add to the sparse sociological studies and to address the gap in qualitatively studying electronic cigarette perceptions, this qualitative study explores the meanings and perceptions of electronic cigarettes among two groups: a group of electronic cigarette users and a group of stop smoking advisors in South East England. This thesis draws on the Boundary Objects Theory (Star and Griesemer, 1989) and Biomedicalization theory (Clarke et al., 2003; Clarke et al., 2010; Clarke, 2010). Firstly, I propose the boundary objects theory as an approach for understanding the social construction of electronic cigarettes. This concept plays a role in facilitating interactions, translations and coherence among different social worlds; hence, it provides a useful framework for analysing the interrelated social worlds of electronic cigarette users and stop smoking advisors. Secondly, I apply the biomedicalization theory to explain the wider contextual influences on the social construction of electronic cigarettes; at the same time, I explore the influence of electronic cigarette perceptions on the construction, resistance or dominance of biomedicalization processes. I argue that the construction of different perceptions of electronic cigarettes is influenced by processes of the biomedicalization theory. I also argue that the biomedicalization theory does not explain how biomedical processes are constructed and how different human agents influence those processes. I argue that electronic cigarettes function as translational boundary objects (Williams et al., 2008), which bridge different worlds together. I also argue that electronic cigarettes function as facilitative boundary objects (Fox, 2011) for adopting harm reduction practices

and hence may reshape the landscape of public health and the sociological discourse of nicotine addiction.

I was motivated to undertake this study because I have an interest in tobacco control and in harm reduction in particular. This emerged from personal experience and my educational background. I grew up in an environment where smoking was a popular habit and where I saw the devastating effect of smoking related diseases. Later, when I worked as a dentist, I saw the adverse influence of smoking on oral health. While studying for my Masters in Dental Public Health, I became aware that smoking is one of the main causes of oral and general health inequalities and became more knowledgeable about harm reduction approaches. I also became interested in understanding smokers' behaviour and helping smokers to stop smoking; hence, I attended 'stop smoking' training. The two days training introduced the main approaches used at English Stop Smoking Services to help smokers quit smoking. When I started my PhD in 2012 in sociology, electronic cigarettes were a new phenomenon, but the suggestion that they could be part of a solution to help smokers stop smoking attracted me to explore their use further. To fit with my personal interest in tobacco control, my ambition to pursue a career in health research and because of my ability to gain agreement from Hertfordshire Stop Smoking Service to do my research at their site, I decided on the topic of exploring how electronic cigarettes are perceived from the point of view of the stop smoking advisors and their clients who use electronic cigarettes. In the Methodology chapter, I will explain how the design and focus of this project have changed due to the challenges I faced in recruiting participants.

It has been argued that qualitative data researchers need to show real sensitivity to how they interpret a social situation or process. By reporting how and why they did what they did from a particular background and set of values, they can help the reader determine whether, or how, the researchers' perspectives influenced their conclusions. (Altheide and Johnson, 2011). The authors argue that:

focusing on the process of investigation and communicating that process, the problems and solutions encountered in accessing, collecting, analyzing, and interpreting data-to the best of our ability-is quite consistent with analytic realism, or the general notion that the social world is an interpreted one. (Altheide and Johnson, 2011: 593)

I came to research from a positivistic background in Dentistry. But, after studying for my Masters in Dental Public Health, I developed an interest in the interpretivist qualitative approach. Despite my move to the social sciences discipline to do my PhD, I still felt intellectually caught between two paradigms. On the one hand, my explicit theoretical and methodological position rejected the adoption of a passive voice and the notions of objectivity, where I as a researcher remain detached and neutral in order to produce 'objective' scientific facts. On the other hand, I felt a positivist pressure to detach myself from my research and hide my voice. My approach also reflected the epistemological and ontological assumptions underpinning the methodological and theoretical tradition I was using in analysing my data in which there is a tendency to subjectivities and interpretations of meaning. I do, however, realise the importance of being reflective when conducting research and I am aware that my biases and preconceived assumptions may have influenced my interpretations, as Sword (1999: 277) explains:

Although some would criticize the subjectivity that is inherent in interpretive work, no research is free of the biases, assumptions, and personality of the researcher. We cannot separate self from those activities in which we are intimately involved.

I will address reflexivity in both the Methodology and the Conclusion chapters. Next, I present my research questions.

Research Questions

The following questions will be addressed:

- 1) How are electronic cigarettes perceived by electronic cigarette users and stop smoking advisors?
- 2) What are the perceived risks associated with electronic cigarettes, as discussed by electronic cigarette users and stop smoking advisors?
- 3) What factors have shaped these perceptions of electronic cigarettes?

The data collection started in 2014 and was completed in 2015, meaning that different electronic cigarette users used different electronic cigarette devices which became available in the market during that period. The study, however is exploring the perceptions of

electronic cigarettes without focusing on a particular brand, design, 'generation' or particular components, flavours or nicotine concentrations.

1.6. Structure of the Thesis

This thesis is based on a methodology that includes qualitative interviews. The following Chapter 2, 'The Debate around Electronic Cigarettes' Risk', discusses the risks attributed to electronic cigarettes as identified in national and international studies. It provides a partial literature review on the sociology of risk by introducing major risk theories relevant to this study. It discusses the link between risk perceptions and trust between officials and lay people, and explores risk perceptions and stigma. Chapter 3, 'The Theoretical Framework of the Thesis', discusses the theoretical concepts (Biomedicalization and Boundary Objects) and how they formed the basis for the thesis research questions. In Chapter 4, 'Research Methodology', I describe the range of factors that shaped the overall scope of this study. I provide an overview of the methods used to collect and analyse data and justify why they were chosen. In Chapter 5, 'The Individual Choice to Use Electronic Cigarettes as a Treatment or Substitute', I use interview data to elucidate the perceptions of electronic cigarettes as described by electronic cigarette users and stop smoking advisors. I present the reasons for using electronic cigarettes as revealed by both groups, and discuss two key themes: electronic cigarettes' ambiguity and individualisation. In Chapter 6, 'The Ambiguity of Electronic Cigarettes' Risk', I use interview data to discuss the potential physical and social risk of electronic cigarettes, as identified by participants, and link the discussion to the sociology of risk. In the final chapter (Chapter 7), I consolidate my findings. I discuss the commonality and disjuncture between the perceptions of electronic cigarettes drawn on by the two datasets. I discuss how the combination of theories enabled me to elucidate the different perceptions of electronic cigarettes and understand the contextual factors that influenced these perceptions. I conclude the thesis by outlining some opportunities of further research.

1.7. Summary

This introduction has provided the relevant historical context for this study. It traced the history of tobacco use, nicotine addiction, tobacco public health and harm reduction in the UK. It presented an overview of the emergence and use of electronic cigarettes in the UK. It

described the position of electronic cigarettes in harm reduction and in NHS Stop Smoking Services, especially in South East England, where the study was conducted. It also shed light on the role of the tobacco industry, marketing strategies and the media. In so doing, I began to reveal some of the key socio-political trends that influence the perceptions and discourse of electronic cigarettes. This chapter revealed the substantial controversy that electronic cigarettes have generated and the gap in the research which provided the motivation for conducting this study. The next chapter focuses on the risks and benefits of electronic cigarettes.

Chapter 2. The Debate around Electronic Cigarettes' Risks

2.1. Introduction

As outlined in the previous chapter, the emergence of electronic cigarettes has provoked substantial controversy. The controversy over the potential risks attributed to electronic cigarettes is at the core of this debate. This chapter explores the risks attributed to electronic cigarettes as identified in national and international studies. It discusses the link between risk perceptions and trust between officials and lay people, and explores risk perceptions and stigma. These issues are important in helping to explain the role of risk perceptions of electronic cigarettes, among other social meanings, on the stance that different participants take on electronic cigarettes; they also help to understand the relation between the experts and the lay electronic cigarette users, and the stigma that may arise towards electronic cigarettes. The chapter begins by introducing major risk theories relevant to the thesis, followed by the notion of trust between experts and lay people. This is followed by focusing on the link between risk perceptions and stigma. I conclude by presenting the identified and perceived benefits and risks attributed to electronic cigarettes.

2.2. Risk Theories

This section introduces the major sociological risk theories relevant to this study.

In the literature, there is no widely accepted definition of the term 'risk' (Aven and Renn, 2009), either in science or in 'lay' perception (Renn, 1998; Joffe, 2003). Similarly, there has been no broadly accepted model of risk perceptions (Heinßen, Sautter and Zwick, 2002; Hawkes and Rowe, 2008). Risk has been the subject of numerous studies across many disciplines, such as economics and psychology. Renn (1998) pointed at the role of sociological and cultural sciences in developing broader risk concepts and helping to understand the variability of risk. This is achieved by exploring and analysing the social and cultural variances and their influence on risk perception. Numerous social sciences scholars have studied risk (e.g. Douglas and Wildavsky, 1982; Clarke, 1989; Giddens, 1990; Luhmann, 1990; Bauman, 1991; Beck, 1992a, b; Douglas, 1992; Lash, Szerszynski, Wynne, 1996; Lupton, 1999; Lash, 2000; Tulloch and Lupton, 2003). Social theorists have highlighted the complexities of establishing a conceptual framework of risk. However, despite

disagreements about the different approaches proposed to study risk (Wildavsky and Dake, 1990), scholars agree that risk has become an increasingly important phenomenon and a pervasive issue in contemporary Western society (Mitchell and McClean, 2014). It has also been argued that, in Western societies, risk has become a central part of human existence, as well as an integral concept of human experience that is associated with responsibility, choice and blame (Lupton, 1999: 26).

The essence of risk, as Adam and Loon (2000: 2) argue, is not that: 'it *is* happening, but that it *might be* happening'. Lupton identified three major theoretical perspectives in sociological writings on risk. These are the 'risk society', 'governmentality' and 'cultural/symbolic'. Each of these approaches was based upon the work of different influential scholars (Lupton, 1999: 26). Later, Tulloch and Lupton (2003) developed their 'socio-cultural' approach to risk that was interpreted as a descendant of the cultural theory (Zinn, 2004: 10). I identified a relevance to my thesis of 'risk society' and the 'sociocultural' approaches; hence, I elaborate on these two approaches next.

2.2.1. Risk Society

The risk society approach, according to Lupton, draws upon the writings of Beck (1992a, b; 1995; 1999) and Giddens (1990; 1991). This approach asserts that risk has changed over the years. Whilst risk used to be linked to natural events outside the scope of human responsibility, in modern societies risk is increasingly linked to human actions and decision-making (Giddens, 1990; Beck, 1992 a, b; Ewald, 1993). Giddens explained the transition from external risk to what he called 'manufactured risk', referring to risk created by human development, especially by the progression of science and technology (Giddens, 1999: 4). Risk society is believed to be increasingly living 'on a high technological frontier which absolutely no one completely understands and which generates a diversity of possible futures' (Giddens, 1999: 3). Both scholars believe the risk society has produced risks and is constantly worrying about the future and safety, and is increasingly preoccupied with debating, preventing and managing those risks (Giddens, 1999: 3; Beck, 2006: 2). Indeed, in contemporary society, the effects of different risks are deeply debated by politicians, scientific experts, the media and the public (Mythen, 2004: 2). Beck and Giddens also pointed at the disconnection between lay people and professionals on the risk issue. They explained processes of 'reflexive modernization' (criticism of the outcomes of modernity),

and individualisation (human responsibility to cause and minimise risk). In world risk society, individuals are required to face the 'ungraspable threats to civilisation' and cope with unexpected uncertainties and the 'unintended consequences of modernity' (Beck, 1992a; Beck, Bonss and Lau, 2003), and are increasingly described as 'responsible consumers'. Accordingly, individuals bear the responsibility of making health decisions on their own; yet, at the same time, they remain under the power of expert systems that fail to control and manage the uncertainty of the global world (Beck, 2006: 8). This process of making decisions, as a result of anxieties and uncertainties about risk, includes critical reflection, self-confrontation and self-transformation, as 'the self becomes a *reflexive project*' (Beck, 1996; Giddens, 1991: 32; *emph. in original*). In their paper, Beck, Bonss and Lau (2003: 14) discussed 'meta-change resulting from the unintended consequences of simple modernization'. The scholars described the 'institutional turbulences' that are caused by risks of new technologies, and noted how the public reflection on technologies leads to 'meta changes' (p: 15), as the uncertainty of technology leads to conflicts among different actors such as politicians, decision makers, consumers and the mass media.

The 'risk society' approach seems to capture the discourse of electronic cigarettes, as the uncertainty that electronic cigarettes have created has led to a widespread debate about their risk in society. It has also shown individuals making their decisions amid uncertainties. Nevertheless, the risk society approach was criticised for failing to demonstrate the role played by several sociocultural factors such as gender, age, social class and others in constructing varied risk knowledges and experiences (Lash, 1993; Lupton and Tulloch, 2002). The approach was also criticised by Douglas for its focus on the responsibility of individuals in making choices. Douglas introduced the cultural theory (1990; 1992) and believed that risk perceptions are influenced by culture (Douglas, 1992: 58). Douglas sees risk 'as a socially constructed interpretation and response to a real danger that objectively exists, even if knowledge about it can only ever be mediated through sociocultural processes' (Lupton, 1999: 40). Therefore, it is believed that people react to risk according to the way they perceive society and the legitimacy that they ascribe to institutions. Thus, they adhere to specific social relationships, generating a distinctive perspective of the world, referred to as 'cultural bias' (Wildavsky and Dake, 1990; Langford et al., 2000: 692). The approach was criticised by some scholars who postulate that individuals may show a

different 'cultural bias' in different contexts and in different situations over time (Langford, 2000: 693; Renn, 2002). Later, Tulloch and Lupton (2003) developed their sociocultural approach to risk that was considered a descendant of the cultural theory (Zinn, 2004: 10).

2.2.2. The Sociocultural Approach

Tulloch and Lupton interviewed lay people and 'experts' in the UK and Australia to explore risk as part of everyday life and how people understood risk on a personal, regional and a global level. Within the sociocultural approach, individuals are heavily influenced by their cultural context; they refer to different sources of information, which can be competing or contradictory and, consequently, they form their own knowledge. Risks here are discursively constructed in daily life and are influenced by several factors, including: mass media, individual experience and life discourse, local memory, moral principles and personal judgements (Tulloch and Lupton, 2003; Zinn, 2004). Hawke and Rowe reviewed 67 qualitative studies on risk perception and concluded that cultural and socio-economic factors are important in explaining how and whether people perceive something as 'risky' (Hawke and Rowe, 2008: 633). The review found that a high perception of risk was associated with the following factors: low trust in the appropriate body; high feeling of powerlessness or low control over a hazard; low level of voluntary engagement in a particular activity; and absence of perceived benefits. Some studies (e.g. Lupton and Tulloch, 2002) found that demographic aspects such as age and sex are important for risk perception.

In the same vein, this thesis takes into consideration the different contextual factors that have an influence on the perception of risk among the two data sources. It is vital to emphasise that my thesis considers risk as something that is socially constructed. It also recognises that knowledge about risks is socially constructed, dynamic and historical, as it is mediated through social and cultural frameworks of understanding (Lupton, 1999: 22; Zinn, 2009: 524). This assumption helps to detach this study from the objectivist and reductionist understandings of risk, which interpret risk as a risk assessment or statistic-probabilistic calculation (Zinn, 2009). In this thesis, I focus particularly on the construction of risks 'as being real' and on how this understanding influences people's actions (Zinn, 2009: 519).

In the next section, I discuss the trust between officials and lay people in view of the above sociological risk theories. I discuss briefly policy-making and risk, and how the interaction between the lay users and the professionals is influenced by risk perceptions. This is an important concept to discuss in this thesis, because the official knowledge has an influence on the discourse and perceptions of electronic cigarettes.

2.3. Risk and Trust between Professionals and Lay People

This thesis explores the perceptions of both health professionals on the one hand, and the lay electronic cigarette users' perceptions on the other. Hence, examining how electronic cigarette users interact with health professional and official knowledge, and the level of trust they demonstrate, will increase my understanding of the construction of electronic cigarette perceptions.

A number of empirical studies have confirmed that having trust in expert systems is vital in shaping risk perceptions and individual decision-making strategies (Earle and Cvetkovich, 1995; Heinßen, Sautter and Zwick, 2002; Green, Draper and Dowler, 2003; Raithatha et al., 2003; Brown, 2009). Although, in the past decades, it was believed the public had become less confident in state institutions (Kasperson, Golding and Tuler, 1992), institution-related trust is recognised as an important filtering function through which to perceive and evaluate risks (Heinßen, Sautter and Zwick, 2002: 44). In their review, Hawke and Rowe (2008) pointed at several studies that associated low levels of trust in a particular body with high levels of perceived risk, and vice versa (e.g. Wakefield and Elliott, 2000; Brown and Ping, 2003; Walter et al., 2004; Aldoory and Van Dyke, 2006). Professional or 'expert' knowledge is argued to be vital to the construction and publicising of health risks, and to promoting the domination of normalising technologies (Green, Thompson and Griffiths, 2002: 277). It has also been suggested that people's perception of health risk changes over time and is usually mediated by politics and policy (Bröer et al., 2014: 525). Further, Putnam (2001; 2002) suggested that trust breakdown creates uncertainty, which has an acute effect at psychological, social, political and economic levels. Similarly, Lupton (1997b: 380) warned that 'in the face of conflicting options' and uncertainty, the lack of trust in medical expertise may result in 'paralysis and distress'. In society, managing risks became a key part of the political decision-making. Although such risks do not originate in

the political sphere, they have to be managed by politicians (Giddens, 1999: 5). I will discuss this next.

2.3.1. Policy-Making and Risk

Several studies have looked at the interconnection between policy-making and risk (Alaszewski and Brown, 2012; Aven, 2013; Bröer et al., 2014). Brown and Olofsson (2014: 426) believed that risk has become 'potently and insidiously political'. They discussed how uncertainty became an important resource for policymakers. They also argued that different social problems, which may not have been previously characterised as risk, are prone to be framed as risks. Different actors with different agendas may forward certain perceived risks to the political arena; consequently, policymakers are required to tackle these risks. Both scholars argued that, depending on the interests and legitimacy of policymakers and other stakeholders, risks can either be emphasised and problematised, or ignored (p: 428). Moreover, the impact of policy interventions and rhetoric have an influence on others, who may experience uncertainty and vulnerability in new or different ways. The polarisation of opinions in society makes it difficult for policymakers to determine sound health risk policies that can compromise or find an acceptable middle ground. In cases of great uncertainties, it is argued, the public expects institutions to have risk expertise and communication, to be responsible for safety, regulation, control, contingency measures and, if necessary, for compensation (Gregory, Slovic and Flynn, 1996).

Linke and colleagues (2014) traced the relationship between science and policy. They emphasised that scientific expert knowledge and advice are considered a basis for political decision-making in most domains of industrialised countries. However, the importance of science becomes questionable when it conflicts with social or political values (p: 506). Giddens pointed at the frequent disagreement between scientists, which results in lay people, government authorities and politicians 'taking a decision in the context of conflicting, changeable scientific and technological information' (1999: 6).

An increasing aspect of modern risk societies is the simultaneous distrust and reliance on expert knowledge (Giddens, 1991; Lupton and Chapman, 1995; Nettleton, Burrows and O'Malley, 2005). Zwick (2002a: 45) discussed two dilemmas that face the public in modern societies. First, people know less about the risks that result from the increase in abstract

technologies and hazards; hence, they rely on the information from the technological designers and on political regulations to control risks. The second is 'the asymmetry of communication', as there are different patterns of exchanging information between individuals and institutions. Hence, this affects the 'institution-related trust' and the interaction between professionals and lay people, as I discuss next.

2.3.2. Interaction between the Professionals and Lay People

Individuals in Western society, according to many theorists (Giddens, 1991; Beck, 1992a; Armstrong, 1995), follow 'expert' or professional knowledge as part of risk-avoidance practice and self-care. Giddens argued that the relation with science and technology has shifted from taking scientific knowledge for granted to a more dialogic and engaged relationship with science and technology (1999: 6). Beck (2006: 8), however, pointed to the shift of the position of key institutions of modernity in science, business, mass media and politics from 'trustee to suspect'. These are seen as a 'source of risk' as well as risk management instruments. Beck believes that individualisation is an outcome of 'a *failure* of expert systems to manage risks'. He explained how individuals became 'alienated from expert systems', and are forced to mistrust the promises of control and risk rationality by these key institutions. Giddens (1990: 35; 1994: 89), on the other hand, argued that individuals calculate risk and make cognitive decisions; but, at the same time, they trust the expert system based on the 'assumption of technical competence'.

Lash and Lupton pointed at the limitations of the reflexivity concept proposed by Beck and Giddens and argued against individualisation. Lupton (1997b: 373) explained that, when lay people interact with health professionals, they act either as a 'consumerist' or as a 'passive patient', depending on the context. Reflexivity, according to Lupton, has failed to recognise 'the complexity and changeable nature of the desires, emotions and needs', which influence the interaction between lay people and health professionals or medical knowledge. Lash suggested that people respond 'aesthetically' and 'emotively' to risk. Responses, according to Lash, can be non-reflexive, based on unarticulated assumptions and moral values that are developed and shared by members of cultural subgroups. Lash asserted that contradictions and contingency are part of the modern self, but are not fully acknowledged by Beck and Giddens (Lash, 1993; Lupton and Tulloch, 2002). Also, the sociologist scholar, Clarke (1989: 181-182), criticised the researchers' assumption that

people follow a rational and logical model of decision-making when dealing with hazards. Further, Lupton (1999: 87) argued that, since 'risk' has become 'problematized, rendered calculable and governable', health decision-making has become part of the 'life-worlds' of individuals. However, rather than passively absorbing health messages and making stand-alone informed choices, individuals make health decisions based on 'mediated interpretation'. It has been suggested that 'experts' and lay people often disagree about the meaning of risk (Gregory, Slovic and Flynn, 1996). Lay people's risk perception processes are subjective (Hay et al., 2005); they perceive risk in a more complex and multi-dimensional way than do risk assessors, or experts, who base their risk assessment on the possibility of human harm (Hawkes and Rowe, 2008: 617). Hence, 'lay actors often resist or directly challenge experts' judgements on risk' (Lupton, 1999: 111; Green, Thompson and Griffiths, 2002: 277).

In recent years, the notion of an 'expert' patient has emerged in UK health policy (DOH, 2001) as part of the government's plans to 'modernise' the health service (Wilson, 2001: 134). Fox, Ward and O'Rourke (2005) noted how the DOH (2001) linked patient expertise with "“empowerment”, a “better quality of life”, “self-esteem” and a “userled NHS”." Similar to Giddens and Beck's arguments earlier, the 'expert patient', according to the DOH, is expected to take responsibility for researching health conditions and to interact with the medical professionals collaboratively. In their study on weight loss, Fox, Ward and O'Rourke used Foucault's (1980) concept of 'technology of the self', where a body is being disciplined in relation to systems of thought, to describe the 'expert patient' relation, which they also described as a 'reflexive project of self-governance' (2005: 1306). The patient's expertise, it has been proposed, is grounded in 'subjective experiences of embodiment, health and illness' as opposed to the medical model of assessment of professional expertise (Tuckett et al., 1985 in Fox, Ward and O'Rourke, 2005: 1306).

It is argued that risks created by the momentum of electronic cigarettes innovation have created an atmosphere of mistrust between the professional and lay people (Beard, 2015). Moreover, scholars have argued that poor risk communication on the part of a particular institution can lead to a loss of confidence and trust and, hence, facilitate the formation of stigma (Zwick, 2002a). However, in contemporary public health discourses, it is expected that individuals develop an awareness of risks, can calculate risks, can be prudent,

and follow experts' advice (Lupton, 1999; Rose, 1990; Rhodes and Cusick, 2002). Those who fail to change their behaviour accordingly may be judged irresponsible, blamed for the lack of self-care (Petersen, 1997), or even 'find themselves stigmatized and subject to moral judgements' (Lupton, 2006: 14). Stigma has been a major concept in the field of smoking. Similarly, social acceptability, as indicated in the first chapter, plays a key role in the increased popularity of electronic cigarettes. For these reasons, it is essential to discuss the concept of stigma, which I will turn to next.

2.4. Risk Perceptions and Stigma

Risk perception studies showed that fear from possible risk may lead to this risk becoming stigmatised. Hence, risks associated with electronic cigarettes may lead to the stigmatising of electronic cigarette users. I discuss this in view of the stigma attached to smokers in the West.

Sociologists like Durkheim have emphasised the powerful role of social norms as tools of social control. The key idea is that individuals want to follow social norms to avoid social exclusion. Those facing stigmatisation change their behaviour and gain direct benefits which, in some cases, lead to indirect benefits to society because of a reduction in illness or socially disruptive behaviour (Gibbs, 1965). The term 'stigma' was initially introduced by Erving Goffman in the early 1960s. The concept describes the link between a person and an undesirable stereotype, which leads other people in the society to discredit that person (Goffman, 1963: 3). Stigma was defined by Gregory, Slovic and Flynn (1996: 216) as:

something that is to be shunned or avoided not just because it is dangerous but because it overturns or destroys a positive condition, signalling that what was or should be something good and acceptable is now marked as blemished or tainted.

Social stigmatisation theory, it was argued, seems to be able to accommodate multiple forms and severities of stigma; it involves stereotyping, status loss, experiences of discrimination, and the personalisation of negative stereotypes (Stuber, Galea and Link, 2009). According to scholars, the phenomenon of stigmatisation seems to have increased during the late twentieth century, while the social amplification of risk perceptions has been a feature of various health and risk events in many nations across the globe (Pidgeon and Barnett, 2013: 4).

Scambler and Hopkins (1986) conducted a British study on epilepsy and distinguished between 'enacted stigma' and 'felt stigma'. Enacted stigma refers to manifest discrimination and hostility against a person based on their social unacceptability or perceived stigmatised status. Felt stigma signifies both a sense of shame and fear of encountering enacted stigma (Scambler, 2009: 445). Moreover, Steward et al. (2008) distinguished between 'felt normative stigma' and 'internalized stigma'. 'Felt normative stigma' refers to a subjective awareness of stigma which it is expected will motivate individuals to take action to avoid enacted stigma' (Scambler, 2009: 446). Internalised stigma describes when those who are subjected to stigma from others accept that their discredited status is valid, and hence the consequence is 'self-stigma' (Steward et al., 2008: 3). However, some studies that addressed stigma pointed at minorities who rejected being victims and resisted being stigmatised (Schneider and Conrad, 1980; Scambler and Hopkins, 1986). Also, Scambler and Paoli (2008) introduced notions of 'project' stigma and deviance, where both notions refer to the rejection of shame and blame, respectively.

It was found from cross-cultural studies that the consequences of stigma are 'remarkably similar in different health conditions, cultures and public health programmes' (Van Brakel, 2006: 329). Stigmatisation of risks can influence behaviour and can result in the avoidance of products or places (Zwick, 2002b: 28). Garrick (1998: 42) warned that 'technological stigmas' evolve out of considering only the risks and costs of technology because only facts about the risk are highlighted, while the total benefits to society are hidden. Garrick discussed the hidden agendas for particular risk amplifiers and emphasised the role of media in exposing bad news, regardless of the context. Scholars noted that poor presentation of technical information to the public by journalists, critics, review groups and technologists results in misrepresentation and ambiguity of the impact of technology on public safety and the environment (Garrick, 1998; Zwick, 2002a: 38). Hence, the fear of possible health, social, economic or environmental consequences may lead to amplifying the risk or stigma. This means that judging and reacting to risks and stigmas does not rely on the objective risk characteristics, technical or scientific risk studies solely (Kasperson et al., 1988; Gregory, Slovic and Flynn, 1996; Kasperson et al., 2003). Several biotechnological innovations and products were stigmatised due to fear and ambiguity, such as nuclear technologies, milk produced with the aid of Bovine and genetically-engineered bacteria

(Gregory, Slovic and Flynn, 1996; Garrick, 1998). Fear has also been linked to stigmatising attitudes towards various attributes, health conditions and behaviours such as leprosy, HIV/AIDS, mental illness and smoking (Scambler and Hopkins, 1986; Stuber, Galea and Link, 2008).

2.4.1. Stigma and Smoking

Stigma and smoking have been addressed in the literature (Markle and Troyer, 1979; Brandt, 1990; 1998; Louka et al., 2006; Bayer and Stuber, 2006; Stuber, Galea and Link, 2008; Helweg-Larsen, Tobias and Cerban, 2010). Stuber, Galea and Link (2008) used data from a general population survey of New York City residents, including current and former smokers. They suggested the following factors contributed to the formation of smoker-related stigma among their participants: (a) construction of smoking as a voluntary behaviour, (b) fear that second-hand smoke harms children, (c) structural forms of discrimination against smokers, (d) low levels of education, and (e) social norms specifically, disapproval of smoking behaviour expressed by family and peers. Helweg-Larsen, Tobias and Cerban (2010) conducted in-depth qualitative interviews with 15 smokers from each Denmark and the US. They found that Danes and Americans had similar experiences with disapproval and stigmatisation and described a society that considered smokers as 'bad, low-class, undesirable individuals that are treated as immoral social outcasts' (p: 883). Gough et al. (2009) conducted 22 focus group discussions with young adults from both high school and university settings in the UK. They reported a consensus over the claim that smokers were over-targeted and treated unfairly compared to other groups.

Several studies suggested that stigma has played a role in reducing cigarette consumption and smoking prevalence (Kim and Shanahan, 2003; Hammond et al., 2006; Alamar and Glantz, 2006; Amonini, Pettigrew and Clayforth, 2015). For example, in Louka et al.'s (2006) study, smokers were highly motivated to avoid social disapproval, which influenced them both emotionally and behaviourally. Exposure to social disapproval was found to have an impact on the ways in which smokers felt about their smoking, as well as their smoking behaviour (Louka et al., 2006). However, in Helweg-Larsen et al.'s (2010) study, some participants said that smoking regulations, but not the stigma, reduced their cigarette consumption. Stuber, Galea and Link (2009) provided some evidence that smoker-related stigmas may lead to detrimental consequences; one consequence was social

withdrawal from non-smokers' peers, which might reinforce tobacco use. Another consequence was keeping the smoking status secret, which might prevent smokers from interacting with smoking cessation programmes and benefiting from the available treatments.

The social norms approach, where a social milieu and legal climate are created to lessen the desirability, acceptability and accessibility to tobacco, has been applied to change behaviour at the individual level through changing population level smoking-related behaviours (Zhang, Cowling and Tang, 2010). Kim and Shanahan (2003: 343) expressed their concerns about the 'unfavorable public sentiment' towards cigarette smoking; where unhealthy behaviours, like smoking, are becoming socially unacceptable and, accordingly, stigmatised as deviant behaviours. Moreover, it has been argued that the denormalisation of tobacco use policies has resulted in the stigmatisation of smokers (Bayer, 2008; Bell et al., 2010). Over the past decade, the strategy of 'denormalising' tobacco use has become an important global tobacco control approach (WHO, 2008). Tobacco denormalisation was described by Lavack (1999: 82) 'as all the programs and actions undertaken to reinforce the fact that tobacco use is not a mainstream or normal activity in our society'. These, according to Hammond et al. (2006: 225), include strategies which target those places where people can smoke, the advertising and selling regulations of tobacco products, and providing the public with information about the dangers of second-hand smoke through media campaigns.

Moreover, Bell et al. (2010) provided some evidence of widespread discrimination against smokers in healthcare systems in the West. Such attitudes and practices, according to Bell et al., showed that denormalisation policies succeeded in changing social norms, values and attitudes regarding smoking and smokers. Bell et al. linked this transformation to the growing emphasis on the individual responsibility for health and illness, a concept that was addressed by sociological scholars, as discussed earlier. Most importantly, Bell et al. (2010) suggested that there is no strong evidence that denormalisation strategies will serve to reduce health-related inequalities. In fact, they believe that these strategies are likely to serve to increase health-related inequalities. Stigmatised smokers, they suggested, may not disclose their smoking status to health professionals and, hence, reinforce smoking, as suggested earlier by Stuber, Galea and Link (2009). Also, a 3-wave longitudinal qualitative

study in four localities in Scotland (Ritchie, Amos and Martin, 2010) found that smokers perceived the Smokefree legislation to have increased their feeling of being stigmatised. The separation between smokers and non-smokers had resulted in self-stigmatisation by smokers of their own smoking behaviour. Smokers reported feeling the loss of social status in public places, not smoking outside, reducing social outings and stigmatising other smokers. Thus, the Smokefree legislation, this data suggests, has created an unacceptable social attitude towards smokers.

The ethical justification of denormalisation policies was explored by several scholars (Bayer, 2008; Burris, 2008). For example, Bayer suggested that, since stigmatising policies have succeeded in reducing smoking, they should be morally acceptable. Burris, however, emphasised that public health policies must not act as a social control tool, and should be cautious about the potential for public health efforts to further stigmatise minority groups or classes. It is in this context that electronic cigarettes have been suggested as being attractive to smokers because they can help smokers avoid some of the stigma they come across (Voigt, 2015). Voigt discussed the raised concerns about electronic cigarettes renormalising smoking and the call to apply similar regulations to restrict their use. Voigt argued that the debate about regulating electronic cigarettes should be explored through the lens of the ethical complexities of attempting to manipulate social norms to change an individual's behaviour.

Some evidence has pointed at the electronic cigarette's social acceptability. For example, in ASH surveys, social acceptability was found as a reason for using electronic cigarettes (McNeill et al., 2015). However, the latest ASH Smokefree GB surveys on the use of electronic cigarettes among adults and young people (ASH, 2016b) showed that 1% of users stopped using electronic cigarettes because they were embarrassed to use them in public. Other studies showed a small number of electronic cigarette users were concerned about the social acceptability of electronic cigarette use, and felt embarrassed about using it (Kralikova et al., 2012; Dawkins et al., 2013). In their qualitative study on perceptions of electronic cigarettes, Sherrat et al. (2015a: 9) suggested that regulating electronic cigarettes may be viewed as a social endorsement of electronic cigarettes for some participants who felt uncertain or concerned about electronic cigarettes' safety. However, the authors also reported how some participants were judgemental about 'significant others' who used

electronic cigarettes to stop smoking. The findings, according to the authors, 'demonstrate how social endorsement or even comparison could contribute towards the formation of attitudes around social acceptability'. Disapproval for the similarity of electronic cigarettes to cigarettes was also reported (Sherratt et al., 2015a; Rooke, Cunningham-Burley and Amos, 2015). Similarly, it is argued that the resistance to accepting electronic cigarettes and the public performance of vaping may shift the stigma associated with tobacco cigarette use to electronic cigarettes (Shickle, 2009: 20). In this thesis, concern of stigma emerged among some electronic cigarette users. I will expand on this in Chapter 6. However, next, I will discuss the benefits and risks of electronic cigarettes.

2.5. The Benefits and Risks of Electronic Cigarettes

Risks and benefits are at the core of the controversy that electronic cigarettes have generated. First, I discuss their benefits as an effective smoking cessation aid. Then, I present their identified risks as presented in scientific studies and, finally, as perceived by smokers, ex-smokers, members of the public and electronic cigarette users.

2.5.1. The Efficacy of Electronic Cigarettes as a Smoking Cessation Aid

Data from several studies and a Cochrane review have reported using electronic cigarettes successfully to give up traditional cigarette smoking and reduce cigarette consumption (e.g. Caponnetto et al., 2013; Bullen et al., 2013; Biener and Hargraves, 2014; Etter, 2014; Etter and Bullen, 2014; McRobbie et al., 2014). There is also evidence that electronic cigarettes can encourage quitting or cigarette consumption reduction even among those who have no intention to quit or refuse other support (McNeill et al., 2015: 51). In a longitudinal survey, Etter and Bullen (2014) found that electronic cigarette use may contribute to relapse prevention and smoking cessation. A randomised clinical trial investigated the efficacy of second-generation electronic cigarettes over eight months. The results showed a reduced cigarette craving and withdrawal symptoms immediately and effectively, with almost half of the participants achieving eight-month reductions in, or complete abstinence from, tobacco smoking (Adriaens et al., 2014). A pilot study from Italy followed 71 vape shop customers from seven different shops after their initial visit to the shops. The findings showed significant reductions in the amount of cigarettes smoked per day at six and twelve months. It also showed that 42.2% and 40.8% had quit smoking at six and twelve months

respectively (Polosa et al., 2015). Another longitudinal Internet survey from GB found that using electronic cigarettes daily while smoking appeared to be associated with 'subsequent increases in rates of attempting to stop smoking and reducing smoking, but not with smoking cessation' (Hitchman et al., 2015; Brose et al., 2015b: 1160).

Some studies compared the effectiveness of electronic cigarettes to other used medications. For example, in their survey, Etter and Bullen (2011) reported that around 68% of electronic cigarette users have tried and failed to quit previously using nicotine replacement therapies, Bupropion and Varenicline. Bullen et al. (2010) compared electronic cigarettes with nicotine inhalers and found that electronic cigarettes delivered nicotine more rapidly than the inhaler, while they significantly reduced cigarette cravings and the number of cigarettes smoked at a level similar to that of nicotine replacement products. Moreover, electronic cigarettes were perceived by users to be more satisfying than using an inhaler. One population-based survey (Brown et al., 2014a) of 5,863 English smokers found that those who used electronic cigarettes on their last quit attempt were more likely to quit than those who used over-the-counter nicotine replacement therapies, or no quit aid. In 2015, it was estimated that more than 1 million smokers used electronic cigarettes compared with around 700K, who used licensed nicotine replacement therapies (West and Brown, 2016).

When the efficacy of electronic cigarettes was compared to other nicotine replacement therapies, it was suggested that the latter fail to help many smokers to quit, because they do not deliver nicotine in the same way as a cigarette (Fagerström and Bridgman, 2014), and do not replace the unique sensory cues or rituals associated with smoking (Rose, 2006; Fagerström, 2012). Electronic cigarettes, however, are consumed like conventional cigarettes, so that the characteristics of the smoking habit (e.g. hand to mouth gesture, 'throat hit' of the vapour, exhaling visible vapour) are maintained (Cope, 2013). Therefore, the possible effectiveness of electronic cigarettes as an aid in smoking cessation could be ascribed to these particular features (Farsalinos et al., 2013). It is also argued that the behavioural element is deeply embedded in most addictive practices (Buchhalter et al., 2005). Also, since electronic cigarettes address the behavioural issue of nicotine addiction, even non-nicotine electronic cigarettes are capable of suppressing withdrawal symptoms

(Bullen et al., 2010; Etter and Bullen, 2011; Wagener, Siegel and Borrelli, 2012; Dawkins et al., 2012; Caponnotte et al., 2013).

PHE stated that, although the evidence suggests that current electronic cigarettes are much more popular than other licensed stop smoking medications, it is still unknown if they are more or less effective (McNeill et al., 2015: 51). However, they pointed to emerging evidence that electronic cigarettes can be effective as a cessation and reduction aid (McNeill et al., 2015: 7). ASH concluded that evidence suggests electronic cigarettes 'compare favourably with other stop smoking aids' (ASH, 2016a). However, the NCSCT stated that 'there are a limited number of good quality and reliable studies, especially on the subject of cessation' (NCSCT, 2016: 4).

Next, I discuss the available evidence on the risks of electronic cigarettes. Then, I will present the perceived risks as discussed by the public, smokers, ex-smokers and electronic cigarette users.

2.5.2. Risks Involved in Electronic Cigarette Use

Studies have highlighted some health and safety risks associated with electronic cigarettes. There are also concerns regarding social risk, which include the risk of the uptake and long-term use of electronic cigarettes, gateway use and renormalisation of smoking.

2.5.2.1. Health and Safety Risk

A key concern is the content of electronic cigarettes. For example, an early laboratory analysis had detected nicotine-derived nitrosamine contaminants in some devices (FDA, 2009a). Concerns were also highlighted that inhalation of the main components, many times every day, may cause respiratory irritations (WHO, 2009: 6; German Cancer Research Centre, 2013: 7). The component glycerine has been reported to cause lipoid pneumonia in one electronic cigarette user (McCauley, Markin and Hosmer, 2012). A negative pulmonary effect for second-hand use (passive vaping) has been reported (Flouris et al., 2013). Some studies warned of a possibility that the vapour may become contaminated with metals, or chemicals from plastics in the device (Williams et al., 2013). Other studies demonstrated insufficient information about the liquids, inconsistency of delivering nicotine and incorrect labelling for nicotine level (Trehy et al., 2011; Cheah et al., 2012; Goniewicz et al., 2013a).

Brown and Cheng (2014) conducted a systematic literature search in 10 reference databases throughout October 2013. They found that it was difficult to evaluate the impact of electronic cigarettes on individual users and public health due to cross-product and within-product differences in aerosol production, nicotine delivery and potential product use risks. Concerns have also been raised about the risk of nicotine intoxication; fatal poisoning (especially for children, if a high nicotine content electronic cigarette is swallowed); the hazard of leaked cartridges, as well as the disposal issue (Cobb et al., 2010; de Andrade and Hastings, 2013; Gupta, Gandhi and Manikonda, 2014; Bartschat et al., 2015; Gill et al., 2015). Some adverse health effects were reported after using electronic cigarettes such as: mouth and throat irritations, dry cough, dizziness and nausea (German Cancer Research Center, 2013: 7). A number of accident and emergency cases were also reported after using electronic cigarettes, even though a causal relationship was not confirmed (Chen, 2013). One systematic review concluded that 'due to many methodological problems, severe conflicts of interest, the relatively few and often small studies, the inconsistencies and contradictions in results, and the lack of long-term follow-up, no firm conclusions can be drawn on the safety of ECs [electronic cigarettes]. However, they can hardly be considered harmless' (Pisinger and Døssing, 2014).

These safety concerns have been challenged. For example, it was highlighted that the FDA laboratory test found only trace levels of carcinogens of the corresponding levels in traditional cigarettes, in only a few samples tested, and were at levels similar to approved nicotine-containing products (FDA, 2009b; Cahn and Siegel, 2011). Another study showed that the carcinogen compounds in electronic cigarettes are 9-450 times lower than the levels found in traditional cigarettes, and are comparable to the levels found in currently licensed nicotine-containing products (Goniewicz et al., 2013b). It was also argued that the risk of accidental poisoning due to electronic cigarette use is no different from many household devices and chemicals (Wagener, Siegel and Borrelli, 2012). Additionally, it was argued that the adverse symptoms that were reported after using electronic cigarettes improved over time (Etter, 2010; Caponnetto et al., 2011a; Polosa et al., 2011; Dawkins et al., 2013). It was also noted that none of the experimental or prospective follow-up studies have documented serious adverse events (NCSCT, 2016: 36). For example, Bullen et al.'s (2013) trial described the adverse events for 657 people randomly allocated to electronic

cigarettes or nicotine replacement therapy patches groups. The findings showed no significant differences in occurrence of adverse events between the groups. In another study that addressed the impact of using one brand in relation to long-term safety, Caponnetto et al. (2013) found evidence of significant progressive health improvements, and a decrease of all symptoms throughout the study. One systematic review by Burstyn (2014) deemed electronic cigarettes to be very unlikely to pose significant risks to users and did not identify harms for bystanders from the vapour.

Although existing research does not provide a definitive conclusion about electronic cigarettes' safety in absolute terms, there is an indication that they are less harmful than tobacco cigarettes, and comparable in toxicity to approved nicotine replacement therapies (NICE, 2013a: 11; Farsalinos and Polosa, 2014; PHE, 2015; NCSCT, 2016). A systematic review concluded that 'existing evidence indicates that EC [electronic cigarette] use is by far a less harmful alternative to smoking' (Farsalinos and Polosa, 2014). A report by PHE (McNeill et al., 2015: 12) confirmed that the electronic cigarette is around 95% less harmful than smoking. The NCSCT (2016: 33) stated that studies have not found any adverse effects of short-term electronic cigarette use on haematological or blood chemistry parameters, nor cardiovascular function in both smokers and ex-smokers. As for the long-term effect, NCSCT (2016: 34) stated that, although they do not know the long-term risk, 'the magnitude of any risks that may emerge from long-term e-cigarette use is likely to be small'. Similarly, although the second-hand vapour from electronic cigarettes exposes others to nicotine and to other toxicants, the exposure has been found to be much less than those results from cigarette smoke (Czogala et al., 2014; Goniewicz, Hajek and McRobbie, 2014; NCSCT, 2016: 35).

2.5.2.2. Social Risk: The Uptake of Electronic Cigarettes, Long Term Use, Gateway Use and Renormalisation of Smoking

Concerns were raised that the uptake of electronic cigarettes, by non-smokers, might be a gateway to smoking and, hence, lead to re-normalise smoking. Another concern is the long-term use of electronic cigarettes, which might maintain addiction (Cobb and Abrams, 2011; McMillen, Maduka, and Winickoff, 2012; de Andrade and Hasting, 2013).

Several studies warned that electronic cigarettes might be used as a gateway to smoking, particularly among children and young adults (Henningfield and Zaatari, 2010; Choi et al., 2012; Corey et al., 2013; Pepper et al., 2013; Pepper and Brewer, 2013; Goniewicz, Lingas and Hajek, 2013; Sutfin et al., 2013; Lee, Grana and Glantz, 2014; Wills et al., 2016). For example, in Choi et al.'s (2012) study, some participants stated that electronic cigarettes take users one step closer to smoking, so that they would end up smoking cigarettes. Half of the participants, even non-smokers, admitted they would try an electronic cigarette if offered by a friend. An Internet survey in Poland found that 25 out of a total of 179 participants were non-smokers when they started using electronic cigarettes; of those, 20% reported that they had also started cigarette smoking through the use of electronic cigarettes (Goniewicz, Lingas and Hajek, 2013). However, other scholars have contested the gateway use concern and have argued that, to date, there are no available longitudinal studies that have examined whether electronic cigarettes serve as a gateway to future tobacco use (Pepper and Brewer, 2013; Bell and Keane, 2014; Bauld, 2016). PHE stated that, thus far, there is no data supporting the claim of gateway use (Britton and Bogdanovica, 2014: 14).

Research from different Western countries showed an increased use of electronic cigarettes among young people (Goniewicz and Zielinska-Danch, 2012; McMillen, Maduka and Winickoff, 2012; Pearson et al., 2012; Corey et al., 2013; Demjén et al., 2013). For example, one study from the US found that more than 10% of college students, who reported using electronic cigarettes, had never smoked a conventional cigarette (Sutfin et al., 2013). In the Global Youth Tobacco Survey conducted in 2012 in Hungary among teenagers aged between 13 and 15 years, 6.7% of participants, who had used electronic cigarettes within the last 30 days prior to the survey, were non-smokers (Demjén et al., 2013; German Cancer Research Center, 2013: 19). However, PHE analysed the available evidence and concluded that, with the exception of one Polish survey, electronic cigarette ever-use was reported in less than one in ten children in these studies. Ever-use, PHE found, was concentrated in young people who smoked. PHE could also not identify evidence that non-smoking children who tried electronic cigarettes were more likely to try tobacco later (Bauld, Angus and de Andrade, 2014: 16).

Moreover, evidence from an ASH annual online survey of young people showed that, in 2015, 13% of those surveyed had tried electronic cigarettes at least once, which is up from 5% in 2013. However, more young people (21%) had tried cigarettes than electronic cigarettes and 64% of those using electronic cigarettes had tried tobacco first. Regular use (once a month or more) was rare and mostly among children, who were current smokers at the time or had previously smoked. Compared to other surveys from Wales, Scotland and England, ASH stated that the patterns of electronic cigarette use were similar among all these surveys (ASH, 2015f). ASH confirmed that regular use of electronic cigarettes is limited to current and ex-smokers, while use amongst 'never' smokers 'remains negligible'.

In addition, several studies addressed the long-term use of electronic cigarettes and showed varied results (e.g. Polosa et al., 2011; Capponnetto et al., 2011a). According to a US survey of 216 first-time electronic cigarette buyers, most of the former smokers (56.7%) continued using electronic cigarettes. Of those respondents who were not smoking at the 6-month point (n67), 34.3% were nicotine-free, which, according to authors, suggests that electronic cigarettes can reduce nicotine dependence (Siegel, Tanwar and Wood, 2011). In Bullen et al.'s (2013) trial, a third of the participants allocated to electronic cigarette groups reported continued product use at six months. Those who had relapsed to smoking but continued to use electronic cigarettes at six months, had reduced cigarette consumption. Another study found that 26.9% of quitters who used electronic cigarettes to quit still used these products by week 52, but the majority of people who quit were free from using electronic cigarettes (Capponnetto et al., 2013).

Further, the concern of renormalisation of smoking, which means making cigarette smoking appear to be a normal activity, was highlighted in the literature (Fairchild, Bayer and Colgrove, 2014; Voigt, 2015). However, many scholars and public health bodies have contested this claim (Dunworth, 2015; NCSCT, 2016). Although the NCSCT (2016: 37) acknowledged the validity of these concerns, they stated that there were no data to show that this was happening. In fact, they highlighted the available evidence which showed that cigarette smoking prevalence among both adults and young people had continued to fall in England and the US, while electronic cigarette use increased.

In view of all the above studies, it was recommended that the unintended consequences of advocating electronic cigarettes, particularly in adolescents, should be

considered in future research and policymakers should control electronic cigarette marketing (de Andrade, Hastings and Angus, 2013). Scholars asserted that long-term use of any nicotine-containing product must not be encouraged, although, in certain circumstances, electronic cigarettes can be a lower-risk option than smoking (Borland, 2011). In 2015, the UK government announced that under-18s will be banned from buying electronic cigarettes and there will be restricted electronic cigarette advertisements. Next, I present electronic cigarettes' perceived risk as presented by different groups of people.

2.5.3. Risk Perceptions of Electronic Cigarettes

Here, I present the perceived risk as presented by smokers, ex-smokers, the public and electronic cigarette users.

Several international surveys have addressed the risk perceptions of electronic cigarettes (e.g. Etter and Bullen, 2011; Pearson et al., 2012; Dawkins et al., 2013; Farsalinos et al., 2014). In some studies, electronic cigarette users showed little concern about the safety of electronic cigarettes. For example, an online survey of 6,607 US adult smokers found that participants perceived electronic cigarettes to be less harmful than snus (a dissolvable tobacco), and smokeless tobacco, and less likely to cause lung cancer, heart disease and oral cancer compared to regular cigarettes (Pepper et al., 2015). Pepper et al. suggested that the innovative aspect of electronic cigarettes may have influenced these perceptions. Another online survey of US university students reported that participants viewed electronic cigarettes to be less harmful than other nicotine-containing products (Latimer, Batanova and Loukas, 2013). In a worldwide survey of 19,414 dedicated electronic cigarette users, participants reported minor side effects and substantial health benefits. Most of them considered electronic cigarettes as less harmful than tobacco cigarettes, while 11.0% considered them to be absolutely harmless (Farsalinos et al., 2014). Also, Tan and Bigman (2014) used data from the Health Information National Trends Survey in the US and found that 51% believed electronic cigarettes were less harmful than cigarettes.

To the contrary, other international studies showed concerns about the safety and health influence of electronic cigarettes (e.g. Etter, 2010). In their systematic review, Pepper and Brewer (2013) concluded that there were concerns about the safety of electronic cigarettes, lack of regulation, gateway use possibility and the potential for dual-use or use to

avoid restrictions on smoking. A survey of 64 ever-users of electronic cigarettes from South Spain found that 68% of participants thought that electronic cigarettes were not good for their health (Muñoz et al., 2014). Respondents in another US survey were concerned about the safety and the long-term effect of electronic cigarettes (Baweja et al., 2016). Sutfin et al. (2013) conducted a study reporting on the prevalence and correlations of electronic cigarette use among a large, multi-institution, random sample of college students in the US. They found that half of their sample did not know how harmful electronic cigarettes were when compared to regular cigarettes. Almost a quarter of ever electronic cigarette users (23%) reported uncertainty, while 45% of ever electronic cigarette users reported it was safer than a traditional cigarette.

In GB, a number of quantitative studies have also explored the risk perceptions of electronic cigarettes. For example, a survey conducted in 2010 suggested that 71% of smokers perceived electronic cigarettes to be safer than smoked tobacco (Dockrell et al., 2013). Another population-based survey in GB conducted by Brown et al. (2014b) found that 67% of current smokers perceived electronic cigarettes to be less harmful than smoked tobacco, whilst 24% felt unsure whether electronic cigarettes were safer. However, the perception of harm has changed over the years (O'Connor and Fenton, 2015). A longitudinal web-based survey of a general population sample of British smokers and ex-smokers found that the proportion who perceived electronic cigarettes to be less harmful than tobacco cigarettes decreased from 2013 to 2014. The study found that the perception of electronic cigarettes as less harmful was more likely among older participants, those who had previously perceived electronic cigarettes to be less harmful than cigarettes, those who had tried it and those who stopped smoking during the study. The study also found that perceiving electronic cigarettes as less harmful than tobacco cigarettes predicted later use of electronic cigarettes among participants who had not previously tried an electronic cigarette, especially among smokers (Brose et al., 2015b). It is also reported that more than three times as many people in 2016 than in 2013 think electronic cigarettes are as harmful as, or more harmful than, smoking. Among electronic cigarette users (smokers and ex-smokers), 47% identified that electronic cigarettes are a lot less harmful than smoking. (ASH, 2016b). Sherratt et al. (2015b) conducted a survey of 319 participants recruited from Stop Smoking Services in the North West of England. The results showed that 38.8% (n: 120) of

participants felt uncertain whether electronic cigarettes were safer than smoked tobacco. Sherratt et al. found that risk perception of electronic cigarettes was related to electronic cigarette use, as current electronic cigarette users were more likely to view electronic cigarettes as less harmful than former or never users. However, never users were more uncertain as to whether electronic cigarettes were safer than smoked tobacco.

Few international qualitative studies have addressed the risk perceptions of electronic cigarettes. In their public health study, Barbeau, Burda and Siegel (2013) used focus groups with 11 participants from electronic cigarette forums and websites in the US. Their participants viewed electronic cigarettes as both a tool for smoking cessation and as a safer alternative to cigarettes. Five themes emerged to describe users' perceptions of the reasons for electronic cigarettes' efficacy in quitting smoking: first, 'bio-behavioural' factors; second, social benefits for sharing the experience with others; third, hobby aspects and keeping the habit; fourth, personal identity as 'vaper'; and, fifth, the difference between smoking cessation and nicotine cessation. Additionally, participants considered electronic cigarettes to be capable of facilitating smoking cessation with less harmful effects, without the need to give up nicotine. In contrast, they referred to the negative side effects of nicotine replacement therapies and their ineffectiveness in avoiding a relapse.

McQueen, Tower and Sumner (2011) conducted a health behaviour research. They interviewed 15 participants who attended a vape group meeting in the US. Their participants favoured the unknown risks of electronic cigarettes over the known cigarette smoking risks. The participants, however, pointed out their concerns about the long-term health effects and quality control for liquids and components. Some of the emerging themes were: the culture of 'vaping'; the social and informational support among the vapers' community; the use of Internet resources; the learning curve to using electronic cigarettes; and the different modifications ('mods') available for electronic cigarettes. The study highlighted the different motives and perceived benefits of using electronic cigarettes compared to tobacco cigarettes, including: enjoying the imitation of cigarettes; the improved sense of taste and smell; better breathing and the ability to exercise; reduced costs; and the rapidly reduced nicotine tolerance and dependence.

Choi et al. (2012) conducted 11 focus group discussions with 66 young adults (aged 18-26 years) from the US on different new tobacco products, including electronic cigarettes.

Participants reported positive perceptions of these products, while reporting few negative perceptions. Some participants believed these products were less harmful than cigarettes and helpful in quitting smoking, while others thought the opposite, particularly regarding electronic cigarettes.

Peters et al. (2013), from health science, investigated the beliefs and perceived social norms relating to electronic cigarettes among 47 teenage boys in the US, who self-identified themselves as current electronic cigarette users. The results showed the main reasons for using electronic cigarettes were the 'expeditious consumption and concealment'. According to the respondents, the reasons for the increased popularity of the electronic cigarette were because it was perceived to be healthier than a tobacco cigarette; it looked good and it was easy to access. Participants also self-reported being able to use electronic cigarettes everywhere, including school and home.

Rooke, Cunningham-Burley and Amos (2015) conducted a qualitative of 64 smokers and ex-smokers in Central Scotland. About half of the participants had tried an electronic cigarette and eight had used them for longer term. The results showed a considerable uncertainty around the safety, health effects and regulatory oversight of electronic cigarettes. There were conflicting views with regards to the acceptability of continued nicotine addiction and the similarity of electronic cigarettes to conventional cigarettes. The scholars concluded that: 'different groups of smokers bring diverse expectations, requirements and concerns to their evaluations and therefore to the potential use of nicotine-containing products' (p: 60).

Another qualitative study from the perspective of health psychology was conducted in GB. Sherratt et al. (2015a) undertook semi-structured telephone interviews with 20 participants engaged in Stop Smoking Services in North West England. Participants were concerned about maintaining nicotine addiction through their dependency on electronic cigarettes over the long term. The scholars reported that safety appeared to be a key concern for all participants. However, participants compared the health risks associated with electronic cigarettes against using regular cigarettes and accepted electronic cigarettes' relative safety. The researchers linked electronic cigarettes to Rogers' (2003) diffusion of innovations theory.

To conclude, the perceived risks of electronic cigarettes vary among different populations. In general, there is a conception that electronic cigarettes are less harmful than smoking. The studies above identified some social risks such as maintaining addiction, long-term use and the gateway use, but strong evidence is still lacking.

2.6. Summary

This is the second literature review chapter. It discussed risk in sociology, linked risk to trust between the professionals and lay people, and then discussed the link between risk and stigma. It presented the literature that addresses the risks and benefits of electronic cigarettes. It highlighted the risks associated with electronic cigarettes as identified in the scientific studies and as perceived by smokers, ex-smokers, members of the public and electronic cigarette users. Both physical and social risks were discussed. This overview, in both chapters, has revealed some of the key wider contextual trends that have an influence on the development and discourse of electronic cigarettes in the UK. The following chapter introduces the theoretical framework of the thesis.

Chapter 3: The Theoretical Framework of the Thesis

3.1. Introduction

This chapter sets out the theoretical framework upon which this study is based, and draws upon key sociological concepts to explore the use of electronic cigarettes in this South East England qualitative study. The theoretical underpinnings of my empirical investigation are the boundary objects theory and biomedicalization theory. Here, I want to demonstrate how drawing on both concepts enables me to grasp the meanings of electronic cigarettes as presented in two data sources (electronic cigarette users and stop smoking advisors) through empirical research. I begin by introducing the biomedicalization theory with a particular link to addiction. Then, I will introduce the boundary objects theory. Lastly, I discuss how the theoretical framework informed the formation of the research questions.

3.2. Biomedicalization

Here, I introduce the biomedicalization theory and explain the biomedical processes that I will demonstrate, in the data chapters and the conclusion, their influence on the social construction of electronic cigarettes' meanings. First, I introduce the concepts of medicalization and biomedicalization. Then, I discuss how electronic cigarettes manifest a biomedical era through discussing the processes of biomedicalization. Finally, I provide a critique of both concepts, with a particular link to tobacco addiction. This critique forms the basis for my argument, which links both biomedicalization and boundary objects.

3.2.1. The Progress from Medicalization to Biomedicalization

The concept of biomedicalization is considered to be one of the most powerful 'social transformations' in the twentieth century in the West (Clarke et al., 2003: 161). Biomedicalization, according to Clarke et al. (2003: 161), 'is a historical shift' from the 'medicalization' concept which emerged in the 1970s through the work of influential scholars such as Michael Foucault, Ivan Illich and Irving Zola (Williams and Calnan, 1996: 4). Foucault introduced the concept 'clinical gaze' (Foucault, 1975: 120), which is described as the process through which a social object (such as a disease) is categorised as a medical condition (Armstrong, 2002: 21). Conrad (1992: 209) defined medicalization as 'a process by which non-medical problems become defined and treated as medical problems'. Behaviours

that used to be considered deviant, such as madness, drunkenness and opiate use, become a medical condition, hence shifting such behaviours from 'badness to sickness' (Conrad and Schneider, 1992; Conrad, 2008: 6).

Conrad analysed studies between 1970 and 1980 and, as a result, suggested the following main contributing factors to medicalization: first, the rise of the power of medical authority; second, the growth of social movements and the tendency for individuals to seek technological solutions to problems; third, improved organisational or inter- or intra-professional links; fourth, increased pharmaceutical innovations and marketing of new treatments; fifth, the emergence of health insurance, which is more prominent in the US (Conrad, 1992; Conrad and Leiter, 2004; Conrad, 2008). Conrad also pointed out several changes that affected the organisation of medicine in the 1980s and which, in turn, have had an effect on health issues, such as the growing power of buyers, providers and payers, as well as the rise of corporate medicine. All these factors have played a role in giving authority to other players; hence, affecting the historical dominance of physicians. Also, a shift towards consumerism became evidenced, where the pharmaceutical industry viewed patients as a potential market and where patients act like consumers (Conrad, 2008). Scholars also pointed at the increased focus on risk factors and health promotion and, hence, shifted medical and health concerns into every corner of daily life, behaviours and social problems (Armstrong, 1995; Lupton, 1999; Nettleton, 2002). As a result, medicalization, it is suggested, extended to include more phenomena like childbirth, death, menopause and contraception in the 1970s. Then, in the 1980s/1990s, it further extended to include conditions including post-traumatic stress disorder (PTSD), premenstrual syndrome (PMS) and attention deficit hyperactivity disorder (ADHD) (Clarke et al., 2003).

Later, the medicalization theory was criticised for its limitation in encompassing the advances and the increased importance of pharmaceutical, genomics and biotechnological industries. This has prompted some medical sociologists to propose biomedicalization as an extension to medicalization. Clarke et al. (2003: 164) argued that: 'Social and cultural aspects and meanings of medicalization were elaborated even further and largely through technoscientific innovations.' They believe that the biomedicalization of health began when cases previously understood as 'undesirable' or 'stigmatisable', such as obesity and unattractiveness, became medicalised and were offered medical treatments. They used the

biomedicine concept as a 'regime of truth' (Foucault, 1980: 133) to capture some sociocultural dimensions and to 'demonstrate how processes of biomedical knowledge production assume a role in wider constructions of social reality' (Counts, 2011: 10). Further, they showed how biomedical development creates new social forms, where blurring boundaries emerge between 'public/private, government/corporation, expert/lay, patient/consumer, physician/insurer, university/industry/state, among others' (Clarke et al., 2003: 184). This is where I see the relevance of this theory to my study, as I argue that the ways of thinking about social life and problems increasingly stem from biomedicine. Therefore, the construction of different meanings and perceptions of electronic cigarettes is influenced by biomedical development.

3.2.2. The Biomedicalization Processes

Clarke et al. (2003: 161) proposed five key interactive processes that 'engender' biomedicalization and are 'produced through it': '(1) the political economic reconstitution of the vast sector of biomedicine; (2) the focus on health itself and the elaboration of risk and surveillance biomedicines; (3) the increasingly technological and scientific nature of biomedicine; (4) transformations in how biomedical knowledges are produced, distributed, and consumed, and in medical information management; and (5) transformations of bodies to include new properties and the production of new individual and collective technoscientific identities.' Cipolla (2010) noted that biomedicalization differs from medicalization because it involves more aspects of contemporary life, such as increased pharmaceutical influence and human enhancement. Biomedicalization, therefore, incorporates complex processes of medicalization, which are transformed due to emergent technoscientific, biomedicine and social practices. I draw upon the five processes of the biomedicalization concept as described by Clarke et al. and discuss how electronic cigarettes manifest the biomedical era. There now follows a brief description of each process.

The first process describes what Clarke et al. called 'the Biomedical TechnoService Complex, Inc.'. They used this term to emphasise the role of technoscientific innovations in the growth of privatisation and corporatisation of research, products and services on the national and international level, leading to the expansion of the Western biomedical model. The scholars argued that this Complex shapes the way of thinking about social life and problems where biomedicalization dominates. They pointed at the link between

governments and healthcare and the collaboration between the pharmaceutical industry and academy, hence furthering biomedicalization (p: 168) and keeping the interests of biomedicine. A similar concept was discussed by Abraham, who introduced the 'pharmaceuticalization' concept. Abraham (2008: 872) warned of 'neo-liberal corporate bias', where pharmaceutical regulations fail to keep public health interest as a main priority (2008: 882). Conrad and Leiter (2004: 171) also argued that: a 'Corporatized medical-industrial complex' resulted in medical markets becoming 'an important conduit to medicalization'. In this thesis, I highlight the link between big corporates, the tobacco industry and the government and the effect on the electronic cigarette market and research.

The second process captures the role of different kinds of media, advertisement and digital information in creating perceptions and influencing decision-making processes. In the biomedicalization era, Clarke et al. believed, the proliferation and increase in access to knowledge sources might indicate a process of democratising knowledge. They, however, highlighted how 'the interests of corporate biomedicine predominate' (2003: 178), especially because of the direct to consumer relations. They also explained how the division between 'expert' and 'lay' knowledge was interrupted due to the heterogeneity of knowledge sources, leading to the formation of a new social link. These new modes of proliferating knowledge have resulted in more powerful lay groups (Clarke et al., 2003: 177). Giddens (1991) explained how the availability of information has led individuals to a reflexive application of knowledge, where they simultaneously contest and adopt expert knowledge systems in planning their everyday life. This, according to Lupton (1997b), transforms patients into reflexive consumers, making active decisions concerning treatment procedures. In the literature review and the data chapters, I show the role of media and marketing on electronic cigarette use and the changeable relationship between 'experts' and 'lay' electronic cigarette users.

The third process describes the core of biomedicalization, which is the ongoing 'technoscientization' of biomedicine. Biomedicalization focuses on risk and health with a central mode of action emphasised on drugs and techno-devices (Featherstone and Atkinson, 2013: 117). Clarke et al. described the growth of digitisation in medical technologies. New technoscientific inventions, such as the Internet and the global electronic

communication and information systems, are considered 'key technologies' in this process, playing a crucial role in enforcing global medicine (Clarke et al., 2003: 176; Turner and Khondker, 2010: 120). In this thesis, I discuss the influence of digital technologies on the popularity of electronic cigarettes, and I describe the continuous technical advances of electronic cigarettes.

The fourth process describes how biomedicalization focuses on risk, behavioural and lifestyle improvements, and the industries directed to help achieve these improvements. The rise of concepts of "health maintenance," "health promotion," and "healthy living" imply the importance of achieving and maintaining health (Clarke et al., 2003: 172). In contemporary public health discourses, individuals are also responsible for the health of others (Petersen, 1997). Responsible individuals are expected to identify risk factors, to value and join health promotion regimes, engage actively in accessing knowledge, self-surveillance, prevention, assessing risk and consuming appropriate biomedical goods and services (Clarke et al., 2003). This active pursuing of health, illness and disease by biomedical means is 'a hallmark of biomedicalization' (Clarke et al., 2010: 382). This emphasis on empowering individuals reflects the 'consumerist' approach, where 'lay people' act like consumers, refusing the medical dominance and paternalism when dealing with healthcare services (Lupton, 1997b: 373). With regards to electronic cigarettes, the literature review and my empirical data illustrate how electronic cigarettes were brought into the field of harm reduction approach that emphasises personal responsibility. This is an important process for my thesis, because the electronic cigarette, I argue, is utilised as an empowerment tool; as such, it represents a trajectory for biomedicalization and signifies the biomedical model supremacy in Western society.

The last biomedicalization process I draw upon is 'transformations of identities, through the creation of new identities by using new technology'. Here, there is an emphasis on the transformation of body, self and health through customisation and tailor-made services. Clarke et al. pointed to the shift to customisation, to differ from medicalization, where normalisation is the core. The regulation of bodies in biomedicalization is enforced through an increased importance on individuals' responsibility for transformation to obtain new selves and identities. Clarke et al. refer to four ways that biomedical technoscience are involved in processes of identity formation: firstly, by applying technoscientific methods to

obtain a special social identity, such as the use of infertility treatments; secondly, through creating new ways of life and mandates; thirdly, by redefining the old health-related identities and creating new ones, such as characterising people into high risk or low risk cases; and, lastly, the utilisation of new technoscientific modes of communication, such as telemedicine (Clarke et al., 2003: 182-183). The authors (p: 165) draw on the concept of "technologies of the self" (Foucault, 1988a), where individuals apply methods, tools or technologies to themselves. Foucault explains that 'technologies of self':

permit individuals to effect by their own means or with the help of others a certain number of operations on their own bodies and souls, thoughts, conduct and way of being, so as to transform themselves in order to attain a certain state of happiness, purity, wisdom, perfection, or immortality. (1988a: 18)

This thesis describes the new practice of 'vaping', including its related groups, activities, feelings and regulations. It demonstrates how electronic cigarette users disassociate themselves from smokers. Thus, it illustrates how electronic cigarettes act as 'technologies of the self' that produce new identities.

To conclude, I argue that the development of electronic cigarettes represents a manifestation of the biomedical era. The literature review and my data show how processes of biomedicalization capture these developments, thus providing a contextual explanation for the phenomenon of electronic cigarettes. However, I argue that the theory presents the development of the biomedical phenomenon as a powerful and dominant fact, and a taken for granted progression in Western society, rather than a process occurring within an arena of multiple meanings. I wish to highlight the central role of people in allocating meanings to ambiguous scientific objects such as electronic cigarettes, which become boundary objects. Clarke et al. argue that biomedical development creates new subjectivities and identities, simultaneously encompassing concepts of 'new forms of agency, empowerment, confusion, resistance, responsibility, docility, subjugation, citizenship, subjectivity, and morality' (Clarke et al., 2003: 185). The scholars, therefore, acknowledge the role of human factors in the formation, progression and resistance of biomedicalization. However, this acknowledgement has not been translated, elaborated or given a clear voice within the biomedicalization processes. Clarke et al. present the biomedical processes, but do not explain how these processes are constructed, and how different actors understand, accept,

resist and negotiate these processes. The scholars also state that, in the biomedicalization era, 'There are infinite new sites of negotiation, percolations of power, alleviations as well as instigations of suffering, and the emergence of heretofore subjugated knowledges and new social and cultural forms' (Clarke et al., 2003: 185). This is an important starting point to link biomedicalization with the boundary objects theory. By utilising the boundary objects theory to describe how electronic cigarettes become boundary objects, I aim to elaborate more on what Clarke et al. describe as 'confusion' and 'infinite new sites of negotiation'. Further, in the Conclusion chapter, I reflect on the usefulness of combining both theories by allowing me to explain how electronic cigarettes are creating 'new subjectivities and identities' and 'new social and cultural forms'; hence, enabling electronic cigarettes to become a means for social change.

Since electronic cigarettes are perceived, among other perceptions, as a tool to help smokers overcome their addiction to cigarette smoking, I will discuss the position of addiction and tobacco harm reduction strategies within the medicalization/biomedicalization concepts. This historical overview allows us to see how human factors are the forces behind the formation of biomedicalization and, at the same time, are the forces that resist complete biomedicalization.

3.3. Addiction, Tobacco Harm Reduction and Biomedicalization

This section begins by discussing the biomedicalization of addiction, then links tobacco harm reduction and biomedicalization.

3.3.1. Addiction and Biomedicalization

It is argued that the concept of addiction was invented in the late eighteenth and early nineteenth century as part of a fundamental social structural transformation, which increased the focus on individuals' control over their own 'compulsive' or 'deviant' behaviours (Levine, 1978: 53). The phenomenon of addiction to drugs was first used to describe the habitual drunkenness from alcohol and then extended to include other substances (Levine, 1978: 44). During the 1930s, people addicted to drugs were viewed as 'morally flawed and lacking in willpower' rather than having a health problem; thus, there was an emphasis on disciplinary measures rather than prevention and therapy (National Institute on Drug Abuse, 2008: 1). In 1957, the WHO defined drug addiction as:

a state of periodic or chronic intoxication produced by repeated consumption of a drug (natural or synthetic). Its characteristics include: (1) an overpowering desire or need (compulsion) to continue taking the drug and to obtain it by any means; (2) a tendency to increase the dose; (3) a psychic (psychological) and generally a physical dependence on the effects of the drug; (4) detrimental effect on the individual and society. (Levine, 1978: 54)

Later, in 1964, the WHO replaced the term 'addiction' with the term 'dependence' and likened tobacco to alcohol. 'The dependence syndrome' is defined as:

a cluster of physiological, behavioural, and cognitive phenomena in which the use of a substance or a class of substances takes on a much higher priority for a given individual than other behaviours that once had greater value. A central descriptive characteristic of the dependence syndrome is the desire (often strong, sometimes overpowering) to take the psychoactive drugs (which may or not have been medically prescribed), alcohol, or tobacco. (WHO, 2014a)

Both terminologies are still used without clear differentiation; they both stress the physical and psychological elements of drug use. However, it has been argued that the term 'dependence' has replaced 'addiction' to overcome the moralistic and judgemental associations with the word addiction (Campbell, 2012: 7). Later, during the 1980s and 1990s, the neurobiological discovery of 'opiate receptors' in the brain led to the transformation of thinking about drug problems from 'tolerance' to 'neuroadaptation' (Campbell, 2012: 17), while the brain disease model increasingly influenced diagnosis and treatment of drug problems (Elam, 2012: 56). It was argued that, between 1990 and 2000, the advancement in neuroscience played a major role in the field of addiction. It increased the familiarity of constructing addiction as a chronic disease of the brain and using pharmaceutical medications to treat addictions, and it gained in political and government recognition. These advances have *re-fashioned* addiction as a medical condition that needs medical intervention, and has enforced the biomedicalization of addiction (Campbell, 2012: 15-16, emphasis in original). Hence, the scientific and cultural understanding of addiction during the twentieth century has resulted in the medicalization of tobacco use, paving the way for its subsequent biomedicalization.

Elam (2015) has linked addiction and the biomedicalization theory. First, he explained that the neurobiological explanation of addiction coincides with the biomedicalization processes, where biomedical authority is extending to the biological level. Second, since biomedicalization is associated with technoscientific medical innovations, the use and development of new technologies to explore and analyse addicted brains are considered signs of biomedicalization (p: 48). Third, by portraying addiction as a 'lifestyle disease', the neurobiology explanation of addiction is contributing to the culture of contemporary healthcare, where individuals are responsible for their health (p: 49). Next, I discuss tobacco harm reduction and biomedicalization.

3.3.2. Tobacco Harm Reduction and Biomedicalization

Here, I briefly discuss how tobacco harm reduction is linked to biomedicalization.

Tobacco use, it was argued, was subjected to medicalization when it shifted from being a kind of acceptable social behaviour to becoming an addiction that needed medical treatment (Caron et al., 2005; Rooke, 2013: 22). The first 'doctor-led attempt' to medicalise smoking occurred when scientific evidence proved a connection between smoking and lung cancer in the 1950s (Berridge, 1999: 38). Later, the incorporation of harm reduction in tobacco control policy was seen as a shift towards medicalization of tobacco use (Berridge, 1999; Rooke, 2013). However, over the years there has been an increased acceptance of the biomedical model in explaining nicotine addiction, which led to characterising nicotine addiction as 'a brain disease' (Wise, 2000; Glover, 2006; Courtwright, 2010: 137). It also led to the increased authority of neurobiological explanations of tobacco dependence, and for medicinal nicotine to attain a major role in the everyday practice of quitting, as discussed in part 1.3 (Keane, 2013: 192). Also, the contribution of genomics to the understanding of nicotine addiction (Caron et al., 2005; Demers, Bogdan and Agrawal, 2014; Loukola et al., 2014) has enforced the biomedical discourse of nicotine addiction. Furthermore, Elam and Gunnarsson (2012) argued that nicotine replacement therapies signify biomedicalization as they have been devised to help smokers become more responsible nicotine addicts. Both scholars (2012: 149) used the concept 'civilizing technologies', proposed by Scott Vrecko (2010), and concluded that nicotine replacement therapies are mainly intended to produce 'better' citizens rather than cure physiological health conditions.

It is argued that modern medical, public health programmes such as stop smoking programmes and harm reduction policies have embraced the ‘medical gaze’, and focused the responsibility of health on individuals who, consequently, regulate themselves through the medical lens (Petersen and Lupton, 1996: ix; Miller, 2001: 171). As discussed earlier, according to the biomedicalization concept, citizens are subjected to a form of social control based on self-regulation, self-monitoring and avoiding ‘risk’; they are obliged to acknowledge their biological makeup and susceptibilities, and to improve their own health and minimise illness, through adopting healthy lifestyles and keeping well (Nettleton, 1996; Rose and Novas, 2004: 22). Here, there is an active promotion to consumerism; yet, at the same time, the message of ‘self-governance’ requires individuals to balance their pleasurable behaviours and addiction in order to maintain their health and the public health (Netherland, 2012: xv). This ‘remoralization’ of disease is an important consequence for biomedicalizing addiction as health became a ‘moral obligation’, where addicts have a responsibility to manage their chronic brain disease (Clarke et al., 2010: 63; Campbell, 2012: 21; Elam, 2015). The trend of increased individualisation and promotion of patients’ responsibility and autonomy in health decision-making has become embedded in NHS practices (The Strategy Unit, 2009) and within the tobacco control regimes (Redfield and Brodie, 2002; Mars and Ling, 2008).

Although embracing the ‘brain disease’ concept by new public health programmes has paved the way for biomedicalization of addiction, as suggested by some scholars (Netherland, 2012; Campbell 2012; Elam, 2015), processes of both medicalization and biomedicalization were criticised for failing to accommodate the various dimensions of addiction. Hence, this has hindered the complete ‘bio/medicalization’ of addiction. The following section sheds light on these critiques.

3.3.3. Critique of Medicalization/Biomedicalization of Addiction

This section presents a critique of medicalization and biomedicalization, and highlights some arguments that explain how deeper political, economic and social factors work against the full ‘bio/medicalization’ in societies.

First, it has been argued that both concepts failed to address the importance of the social, political and economic context of addiction (Campbell, 2012: 20; Netherland, 2012:

xvii). One implication for labelling addiction as 'brain disease', and accepting the neuroscience theory of pleasure, would be the widening acceptance for new pharmaceutical treatments for addiction. Placing the responsibility of addiction on the individual's neurobiological and genetics compositions eliminates the role of the environmental and social context in influencing the brain function, shaping behaviours and causing diseases (Midanik, 2004: 212-13; Maturo, 2012). According to Turner (1995: 5), 'one major problem with technological medicine is the fact that it divorces the patient from his social context'. New public health systems, it was argued, agree to harm reduction because they assume it reduces the medical and political burden on the government, thus relieving society from accepting responsibility for, or acknowledging the wider social, legal and economic causes of, different harms (Miller, 2001; Roe, 2005; Berridge, 2011: 200).

Second, these approaches have raised some ethical issues. Besides the ethical concern of focusing the responsibility of health on individuals, rather than the wider social context, the emphasis on the superiority of the scientific medical model over other forms of knowledge is perceived as another ethical concern (Miller, 2001: 173).

Third, it has been argued that the influence of social, economic and political differences has led to uneven medicalization and/or biomedicalization across societies, as well as the lack of a universal approach to addiction (Campbell, 2012: 16). Hansen and Roberts (2012: 98) pointed out that the different underlying concepts of addiction, as 'social, psychological and physiological', are utilised in different phases of health services policies according to social, economic and political trajectories. For example, it was suggested that categorising drugs into legal and illegal is not related to the amount of harm they cause, but rather to the level of power for the social group using them and to other political and economic factors. This link is believed to still exist in this century, and is considered by some scholars to be the key reason for keeping tobacco and alcohol legal, yet keeping marijuana illegal in some countries (Mold, 2011: 124- 125; Netherland, 2012: xviii).

Further, it is believed that persistence of stigma inhibits complete 'bio/medicalization', as some scholars have pointed at the cultural significance and the racial division attached to substance use (Mold, 2011; Netherland, 2012; Hansen and Roberts, 2012). For example, Hansen and Roberts (2012) demonstrated that the biomedicalization of the treatment of opioid dependence was linked to social hierarchy, as it increased the

stigma for the already stigmatised and marginalised users (non-white). The authors also argued that methadone maintenance was accepted by health policies in order to solve the problems of urban unrest and concluded that:

In the case of addiction, the very project of destigmatizing treatment for some leads to intensified stigma for others, as a feature of the way color caste systems are utilized in commodified biomedical economies. (Hansen and Roberts, 2012: 98)

Similarly, it has been argued that the social, cultural and historical context of drug use is a key issue for tobacco control policies. Mold described how the trend in smoking reduction in the UK between 1948 and 2008 was mainly among the higher social groups. This made it easier to increasingly stigmatise smokers, as the habit continued among the poor. On the contrary, tobacco use was glamorised when it was used by elite politicians (Mold, 2011: 117).

Fourth, it is argued that biomedicalization works in line with the market interests by concentrating on individuals' extreme behaviours and neglecting preventive population approaches (Midanik, 2004: 214). Indeed, Hansen and Roberts revealed the marketing strategies of maintenance opioids, where the profitable pharmaceutical industry was promoting and leading clinical research for Buprenorphine as part of the neo-liberal deregulation. Further, Mold pointed to the significance of the revenue of tobacco taxes to governments' economies, a factor that hinders efforts to legalise tobacco (Mold, 2011: 124). Similarly, I discussed in part 1.2.2 how Elam (2012) and Molimard (2013) argued that the pharmaceutical developments in the field of nicotine replacement therapies formed the basis of the acceptance of neurobiology explanation of nicotine addiction. Chapman and MacKenzie (2010) also highlighted that, due to increasingly medicalised smoking cessation and the increased influence of the pharmaceutical industry, tobacco control programmes neglect the unassisted cessation or stopping smoking by 'cold turkey' approach. This approach, the scholars argued, is the most commonly used method by people who have successfully stopped smoking. Similarly, Miller (2001: 177) described the practice of harm reduction as 'a safety net, not a strategy, representing a convergence of economic rationalism and social policy'. As a result, the rise of tobacco harm reduction and the increased acceptance of electronic cigarettes may represent social, economic or political trajectories.

Fifth, the notion of addiction as a chronic relapsing brain disease is considered to be problematic. This is because, even though using drugs is a voluntary behaviour, the addict's brain is to be considered different to the non-addict's brain, and therefore a different set of actions and policies will be established to deal with the assumed state of mind of addicts (Kaye, 2012: 29). Therefore, the question as Kaye puts it:

is not so much whether a biological component to a given disease exists or not – though this may indeed be an important issue in its own right –but rather how a series of socially established meanings and behaviors come to shape the 'activation' and significance (or non-significance) of this material reality. (Kaye, 2012: 39)

This statement is important because it sets the scene for my argument in which I suggest the role of social meanings in constructing, activating or inhibiting biomedical processes. My belief is that biomedicalization theory works differently in different cultures and populations (Campbell, 2012: 23). Campbell (2012: 6) states: 'addictions are hybrid cultural constructs that convey embedded sociocultural meanings that persist in ways that work against full bio/medicalization'. Similarly, through discussing the use of electronic cigarettes, I argue that the different social meanings that different actors hold for electronic cigarettes steer biomedical processes, either towards full 'bio/medicalization' or against it. While biomedicalization processes may seem to be ingrained in Western societies, I want to use the boundary objects theory to argue that these processes are the outcome of complex social negotiations and cooperation between divergent social meanings occurring within a particular social, economic and political context. In her discussion on boundary objects, Star (2010: 614) stated that:

we live in a world where the battles and dramas between the formal and informal, the ill-structured and the well-structured, the standardized and the wild, are being continuously fought.

Hence, I continue to argue that biomedicalization processes are the outcome of these battles and human interpretations. Biomedicalization, I argue, is a dynamic rather than static concept as its processes are constructed around a continuous formation of boundary objects, a concept which I explain next.

3.4. The Boundary Objects Theory

Here, I introduce the boundary objects theory and demonstrate how the electronic cigarette is flexible enough to allow cooperation between different social worlds, but robust enough as a unique entity to form a boundary object.

The boundary objects theory was introduced by Star and Griesemer (1989) as an analytical framework to be applied in complex settings where heterogeneity and cooperation are vital. Star and Griesemer discussed their case study of Berkeley's Museum of Vertebrate Zoology in the early twentieth century. They described the smooth functioning of the museum, which depended on a variety of different groups with diverse aims, values, beliefs and abilities. Boundary objects were defined as those objects used within multiple social worlds and adapted to many of them 'simultaneously'; these objects, therefore, cross the boundaries between these social worlds (Star and Griesemer, 1989: 408). Strauss (1978: 121) referred to social worlds as 'universes of discourse' with typical forms of communication, symbolisation, activities, sites, technologies, and organisations. He stated that, among each social world, various issues are debated, negotiated and contested (Strauss, 1978: 124). Star and Griesemer described boundary objects to be 'both adaptable to different viewpoints and robust enough to maintain identity across them' (1989: 387). In essence, although boundary objects have a recognisable structure, they have diverse meanings in different social groups (p: 393). Mol (2006: 138) stressed that each different social world gives a different meaning to an object, but no one emphasises these different meanings. Thus, a boundary object remains 'fuzzy enough to absorb the possible tensions' and 'blurs the boundaries'. Hence, boundary objects need to possess enough coherence and be recognisable enough to be regarded as an identifiable entity, yet also flexible enough and amenable to different interpretations to allow cooperation by different interests (Mol, 2006).

Star and Griesemer proposed four forms of boundary objects (1989: 410–11). First, 'repositories', that require a set of assembled things such as a library, where diversification and heterogeneity are maintained without confrontation. Second, an 'ideal type', an abstraction or representation, that can be adaptable but lacks detail, such as an atlas. Third, 'coincident boundaries', where different communities share a common object that has the

same boundaries but is perceived differently and can achieve different goals. One example, from Star and Griesemer's study, was the creation of the state of California itself as a boundary object for workers at the museum. So, although the amateur collectors and the conservationists created a different map than the one created by the professional biologists, both shared the same outline of the state and the same goals of conserving California and its natural variety. The final form of boundary objects is 'standardised forms', which are viewed as methods of communication between diverse groups. The literature and my data showed that electronic cigarettes were perceived and used in different ways, by different actors. Hence, I argue that an electronic cigarette is a form of 'coincident boundary'.

According to Jasanoff (2005: 27), boundary objects are 'repositories of multiple meanings', which cannot be easily reduced to a single static form. Fox (2011: 6) defined the boundary objects as 'entities that enhance the capacity of an idea, theory or practice to translate across culturally defined boundaries'. Hence, boundary objects focus on the entities which are used to create coherency and cooperation between groups with diverse interests. This is achieved by the ability of boundary objects to be adapted to the needs of a group, while retaining enough congruity to be useful to others. In this way, 'boundary objects mediate boundaries' (Lee, 2010: 53) and, hence, are described as translational boundary objects. Star and Griesemer defined translation in the context of various social worlds as 'the task of reconciling [the] meanings' of objects, methods, and concepts across these multiple social worlds (1989: 388), so that people can 'work together' (389). As a result, the boundary objects' structure 'is common enough to more than one world to make them recognizable, a means of translation' (p: 393). This thesis sees electronic cigarettes as a means of translation between various social worlds.

Star (2010: 601) pointed at three dimensions in the boundary objects theory: First, the 'interpretive flexibility', which describes the different use and interpretation of an object by different groups. The second dimension, 'the structure of informatic and work process needs and arrangements; where boundary objects represent a set of work arrangements that are coincidentally material and processual, and where the heterogeneity is maintained without ruining the cooperative work, thus 'allowing different groups to work together without consensus' (p: 206). The third dimension, 'the dynamic between ill-structured and more tailored uses of the objects', attempts to explain how cooperation continued even in

the absence or lack of consensus. The scholar argued that most of the studies that applied the theory focused on the 'interpretive flexibility'. She emphasised the importance of the other two dimensions. As Star noted (p: 605), objects exist in-between different social worlds; they also take either a form of ill-structured with vaguer identity objects, or a more specific and tailored to local use objects. Star and Griesemer clarified that 'problems for negotiation' arise as a result of mismatches between the overlapping meanings and representations of particular objects across multiple social worlds; therefore, to maintain coherence and successful negotiations, there must be a careful management of the boundary objects (Star and Griesemer, 1989: 412). They stated that, 'The creation and management of boundary objects is a key process in developing and maintaining coherence across intersecting social worlds' (p: 393). This does not mean creating a consensus, rather 'representations, or inscriptions, contain at every stage the traces of multiple viewpoints, translations and incomplete battles' (p: 413). Groups who are working together without consensus move back and forth between both forms. Consequently, Star argued, people, generally regulators, try to control this back and forth movement in order to standardise boundary objects. An example of this is the increasing standardisation of different territorial representations in many geographical information systems (Star, 2010: 614). Star called for more analytical use for the theory. She recommended the use of the latter two dimensions to study the work arrangement and heterogeneity, and to understand the materiality and infrastructure of a boundary object, rather than focusing on the different interpretations. This is of particular relevance to my study as I show how, within biomedicalization processes, electronic cigarettes, as boundary objects, begin to move and change into standards and processes.

The concept, however, was criticised for placing a greater emphasis upon cooperation between groups and underemphasising the levels of difference between groups involved in the interpretation of an object (Gomart and Hennion, 1999). The latter scholars suggest that groups often cooperate on the basis of precise differences over an object, rather than on the basis of an imprecise or blurred artefact. Lee (2007: 313) held that the concept is not flexible enough and is 'incomplete'. Fujimura (1992) criticised the model for having a weak structure. Fox (2011: 80) criticised the model for being 'taxonomic and descriptive'; providing only categories of boundary objects with a limited range of possible boundary

objects. Fox noted that the concept is sociologically under-theorised, as it does not explain how boundary objects function and how the roles of different human agents influence that function. Similarly, Riesch (2010: 453) argued that the boundary objects theory does not explain how the boundaries develop, why and what they are supposed to consist of and how they get negotiated.

Nevertheless, the theory has been used in different disciplines such as computer science, management, history and philosophy of science. Similarly, several social scientists have applied the boundary objects theory (e.g. Featherstone et al., 2006; Williams et al., 2008; Fox, 2011). Williams et al. (2008) used boundary objects to understand the social construction of human embryos. They analysed the ways in which embryos have similar and different meanings in the related social worlds of embryonic stem cells (ESC) and pre-implantation genetic diagnosis (PGD) labs. Williams et al. argued that embryos function as boundary objects, which help to maintain the differences in goals and practices in the two worlds of PGD and ESC work. They also argued that embryos function as translational boundary objects that unite different actors in a common purpose. They discussed how creating human ESC lines began to bring both worlds into alignment, so that both PGD and ESC scientists can talk about the potential therapeutic value of spare PGD embryos.

Fox (2011) studied the analysis of the innovation of both the antiseptic and aseptic surgical techniques with the intention of explaining both resistance and support of new technologies. Fox suggested that technological objects (in his case, a spray, a gown, a mask and so on) can function as boundary objects in relation to knowledge transfer between two communities (in his case, nascent microbiologists and the surgical profession). This function, he suggested, may be either facilitative or inhibitory, while the mode of function depends on the meanings that these objects encapsulate for key actors. So, 'technological devices or processes may themselves act as facilitative or inhibitory boundary objects during innovation' (Fox, 2011: 70). In his case, the technologies of asepsis were adopted by the surgical profession; hence, the technological objects became facilitative boundary objects for adopting surgical sterility, while the antiseptic technologies were not accepted by the profession. Therefore, the technological objects were considered inhibitory boundary objects for promoting surgical sterility (p: 80). Hence, electronic cigarettes can function as

facilitative or inhibitory boundary objects, depending on the meanings attached to electronic cigarettes by different actors.

Similarly, in her study on the cholesterol controversy, Garrety (1997) considered the bundle of knowledge claims that linked cholesterol to heart diseases. Garrety explained how boundary objects are used to explain the role of people in 'allocating meanings to ambiguous scientific objects and 'facts'' (Garrety, 1997: 755). She also illustrated the role of actors in several social worlds, including the 'lay world' in the discourse of dietary change, despite the lack of scientific-based evidence (p: 757). She stated that, for scientific controversies to emerge, 'different social worlds attempt to draw and redraw boundaries between science and non-science' (Garrety, 1997: 731). Garrety applied the social worlds theory as a framework to investigate the controversy and explain how a scientific outcome emerged from a struggle between groups with competing interpretations.

Accordingly, in the case of electronic cigarettes, it is due to the disagreement and different social meanings allocated to electronic cigarettes that the boundary objects have formed. More specifically, it is the controversy among scientists, public health personnel, the public, electronic cigarette users and politicians that present a problem for those trying to agree a definition and a category for electronic cigarettes. Therefore, while specific scientific terms, e.g. harm reduction, are used, the consequences of their use, and the lack of consensus over their meaning, result in the production of electronic cigarettes as boundary objects. This thesis illustrates that consensus over electronic cigarettes is not necessary for cooperation, as the flexibility of the electronic cigarettes as boundary objects allows for divergent interpretations.

3.5. Discussion

In this thesis, I propose the boundary objects theory as an approach for understanding the social construction of electronic cigarettes. This concept provides a useful framework for analysing the interrelated social worlds of electronic cigarette users and stop smoking advisors, or the interrelated social worlds of those who represent 'bad' nicotine and 'good' nicotine use, as discussed in (1.4.2). In this thesis, I describe some of the ways in which electronic cigarettes act as boundary objects that can help differentiate the worlds of the advisors and electronic cigarette users, or the worlds of 'good' nicotine and 'bad' nicotine,

and yet act as a bridge between these different worlds. This, then, reflects Star's description of boundary objects as objects that work to establish a shared context that 'sits in the middle' (Star, 1989: 47).

I view electronic cigarettes in the same way as I do any other technological innovation, namely as a 'novel piece of reality' that comes with both 'intended and unintended consequences for society' (Bauer and Gaskell, 2002: 383). Electronic cigarettes bring with them opportunities and threats and have the ability to structure behaviour, both in individuals and groups (Bauer and Gaskell, 2002). Electronic cigarettes as boundary objects function as an active vehicle that will enable communication between communities of practice or knowledge. They also encapsulate the broader social meaning of harm reduction, nicotine addiction, contemporary public health and the underlying social relations that surround their development and adoption (Fox, 2011: 82).

I apply biomedicalization to explore the effect of the processes of biomedicalization on the formation of different perceptions of electronic cigarettes, thus forming electronic cigarettes as boundary objects. At the same time, I explore the influence of these perceptions on the construction, resistance or dominance of biomedicalization processes. My choice for this framework is informed by my engagement with the social sciences literature and my empirical data. This combination of concepts, I believe, enables me, as a social sciences researcher, to add a novel contribution to the literature through illustrating how both concepts can be linked to each other, through empirical research, to enhance a deeper understanding of an important emerging phenomenon.

3.6. How Did the Theoretical Framework Inform the Formation of the Research Questions?

Biomedicalization appears to capture the advancement of electronic cigarettes to date. Biomedicalization enables me to explore the effect of the processes of biomedicalization on the formation of different perceptions of electronic cigarettes and, ultimately, the formation of electronic cigarettes as boundary objects. Recognising the significance of electronic cigarette meanings is 'an acknowledgement of the social and power relations' that electronic cigarettes, as technological objects, mediate (Fox, 2011: 82). This context was the basis for the following question:

- What factors have shaped these perceptions of electronic cigarettes?

The remaining questions are formed to help investigate the divergent perceptions in my data sources. They are:

- How are electronic cigarettes perceived by electronic cigarette users and stop smoking advisors?
- What are the perceived risks associated with electronic cigarettes, as discussed by electronic cigarette users and stop smoking advisors?

It is worth noting that the last question, which elaborates on the perceived risks of electronic cigarettes, was formed based on my engagement with the literature and the media coverage of electronic cigarettes. It was apparent that risk is at the core of the circulating debate. Obviously, the different risk perceptions of electronic cigarettes, by different actors, influence the formation of electronic cigarettes as boundary objects. Hence, exploring the different perceptions of risk is an important sociological component for this thesis; therefore, I examine risk perceptions and link them to the theoretical concepts (boundary objects and biomedicalization). I also link them to the sociological literature of risk, which I discussed in the literature review. Answering the research questions enables me to elucidate the position that electronic cigarettes take in different social worlds, and helps clarify the reasons and contextual factors for either adopting, advocating, resisting or opposing electronic cigarette use, or taking a stance in the middle.

3.7. Summary

This chapter sets out the theoretical framework upon which the research questions are formed and on which this study is based. I draw upon two key sociological concepts, namely biomedicalization and boundary objects theory. I propose the boundary objects theory as an approach for understanding the social construction of electronic cigarettes in the social worlds of two different data sources (stop smoking advisors and electronic cigarette users). I argue that biomedicalization processes influence the social construction of electronic cigarettes' meanings and the formation of electronic cigarettes as boundary objects. At the same time, I argue that these processes are the outcome of complex social negotiations and

cooperation between divergent social meanings. The following chapter presents the research methodology.

Chapter 4: Research Methodology

4.1. Introduction

This chapter discusses the broader epistemological, ontological, ethical and methodological considerations that shaped my research strategy and execution. It explains the research methodology and data collection methods that were used to collect and analyse the data in order to investigate the research questions. I adopted the philosophical paradigm of interpretivism. This qualitative, interpretive methodology enabled me to examine the different perceptions of electronic cigarettes amongst a group of electronic cigarette users and a group of stop smoking advisors. A thematic analysis approach (Braun and Clarke, 2006) was employed to analyse my data and identify the major thematic patterns through which the two data sources portrayed electronic cigarettes. This project has been shaped by a range of influences, most notably the process of gaining access to NHS clients at the stop smoking clinics, as well as the low participation rates. This led to a series of amendments that were made in order to find alternative ways of recruiting more participants for this study. Thus, this chapter also describes how these various factors have shaped the design of this project.

The chapter is structured in the following ways. It provides a summary of research sites and the process of gaining access; it presents the debates over the choice of research methodology; it provides a summary of the research design and discusses the methods used in collecting and analysing the data. It concludes by discussing the ethical considerations, reflexivity and research integrity and issues of trustworthiness.

4.2. The Research Sites and Gaining Access

In this thesis, I have been studying real-world events and have come to realise that ‘they assume their own natural course and may alternatively present unanticipated resistances and challenges’ (Yin, 2011: 30). I explain the main challenges I faced throughout this research and how I attempted to overcome them. It is important to shed light on these issues because they have affected the design and progress of this study.

Background:

My first proposal was to study the use of electronic cigarettes in the NHS Stop Smoking Service by interviewing electronic cigarette users and stop smoking advisors at the Stop Smoking Service in Hertfordshire. The NHS Stop Smoking Service in this county is currently managed by Hertfordshire Directorate of Public Health. They run several stop smoking clinics, mostly at General Practitioner (GP) practices. This research used some of these clinics to identify potential participants. The reasons for choosing this particular area of England were, firstly, that Hertfordshire Stop Smoking Service is part of the NHS Stop Smoking Services within England and has an established smoking cessation service that could be accessed for research purposes. Secondly, I was able to gain the interest and support of the Stop Smoking Service team and the Director of Public Health through personal correspondence. Thirdly, NHS Stop Smoking Services across England implement the Department of Health policies and provide a comparable service. Hence, conducting this project in Hertfordshire would provide information which may represent other similar areas in England.

The Process:

To begin this research, I gained the following approvals:

- The approval of the Health and Community Services Research Government Committee, Hertfordshire Council.
- The approval of Hertfordshire Directorate of Public Health.
- The ethical approval of the School of Social Sciences at Brunel University, London.

- The ethical approval of the Social Care Research Ethics Committee (REC)-National Research Ethics Service (NRES). This committee can approve 'qualitative studies in NHS settings with service users which do not include changing the course of treatment.'
- Research Passport to be able to interview participants from the NHS.

I was also required to obtain the approval from the NHS body that runs the GP practices where the Stop Smoking Service used to provide their service. This NHS body used to be the local Primary Care Trust (PCT) until April 2013, when PCTs ceased to exist. This led to confusion about which NHS body could permit access to GP practices. The regional Comprehensive Local Research Networks (CLRN) provided me with the new 'agenda' that was introduced in June 2013 for conducting research at GP practices. This stated that GP practices had become independent contractors and I would, therefore, need to approach each GP practice individually to ask for permission to commence the research. I approached all the listed GP practices that I had obtained from Hertfordshire Stop Smoking Service. Three practices provided me with letters of approval, three approved by email, two declined from participating without disclosing their reasons, and six did not respond to my several emails and phone calls.

The approvals were gained in January 2014. The stop smoking advisors' invitation letters and information sheets were sent to all the stop smoking advisors in Hertfordshire Stop Smoking Service to ask them to participate in the study. The protocol of the research also indicated that the stop smoking advisors would identify electronic cigarette users in their service, inform them about my study and provide them with the electronic cigarette user's invitation letter, which contained my contact details. The first interview took place in April 2014. Due to a lack of electronic cigarette users' participation, even after corresponding with the tobacco control manager and sending several reminders to the stop smoking advisors over a few months, I decided to amend my proposal. Therefore, my proposal was amended and approved as follows:

- Approach stop smoking advisors outside the clinics, such as pharmacies.
- Distribute a leaflet about my study in the local area, in places like surgeries, electronic cigarette shops, pharmacies and supermarket chains, etc.

- Advertise for electronic cigarette users on social media.

I advertised the research on Facebook, as well as on some electronic cigarette websites, Twitter and a local website for Hertfordshire residents. Later, I met a professor at a conference and he offered to help me in getting access to another Stop Smoking Service. He put me in touch with the Director of Public Health in East Sussex (Quit 51). The service in East Sussex had a prior consent from their service users to be contacted on their mobile phones for purposes that might include research. So, after gaining a new ethical approval from the School of Social Sciences, Sociology and Communications ethics office, I contacted the stop smoking advisors at the service to ask for their voluntary participation. The service sent a text message to all electronic cigarette users who were registered on the service with details about my research. I also enrolled electronic cigarette users who participate in a prize draw of £50 and proposed to conduct the interview over the phone to facilitate participation. At the same time, I tried to extend my access to Hertfordshire GP practices, as the expiry for access was coming to an end. Unfortunately, due to more organisational changes, I was directed from one person to another with promises to investigate and get in touch, but no one did. Meanwhile, in East Sussex, the Stop Smoking Service's text messages were sent three times over three months. Leaflets were also distributed at different stop smoking clinics in East Sussex. In my last amendment, the departmental ethical officer approved the advertising of my research on Brunel University's website. The last interview was conducted in July 2015. Despite my intensive efforts at recruiting participants for my study, in the end, the total number of electronic cigarette users was 15 and the number of stop smoking advisors was 13. The numbers were close to the proposed numbers in the first proposal, which was to interview between 15 and 20 electronic cigarette users and 10 advisors.

The design and focus of this project, therefore, is the product of multiple influences. The above explanation of the challenges I faced in recruiting participants has shaped the progress of the study. As a result, the thesis shifted from focusing on electronic cigarette use at the Stop Smoking Service in Hertfordshire to focusing on the phenomenon of electronic cigarettes among different individuals from different counties and backgrounds. The ethical approvals are provided in Appendix 1. Appendix 2 presents a sample of the

invitation letters and information sheets. Appendix 3 presents the consent forms. Appendix 4 presents the draft interview guide.

Before I discuss the data collection methods and process, I will discuss the rationale for my choice of research methodology.

4.3. The Choice of the Research Methodology

4.3.1. Qualitative Research: Interpretivism

Social research is considered an important source of knowledge that can influence policy (Chowdhury, 2014). My choice of qualitative methodology was based on theoretical and practical considerations. First, there is very little qualitative research on the use of electronic cigarettes. Second, this methodology fits with my aim to understand the perspectives of people participating in the study (Bryman, 1988: 60-63) and the meanings and beliefs that underlie their behaviour. Qualitative research:

involves an interpretive, naturalistic approach to the world. This means that qualitative researcher study things in their natural settings, attempting to make sense of, or interpret, phenomena in terms of the meaning people bring to them. (Denzin and Lincoln, 2011: 3)

Hence, my drive to use qualitative research stems from my desire 'to capture the meaning of real-world events' from the perception of my participants (Yin, 2011: 11).

The interpretivism paradigm fits well with the research questions of this thesis, as I clarify next. Interpretivism emerged in the nineteenth century from the German philosopher and historian, Wilhelm Dilthey (1833-1911). Dilthey distinguished between the natural sciences (*Naturwissenschaften*) and the human sciences (*Geisteswissenschaften*). He argued that, while the natural sciences aimed at developing causal explanations (*Erklärung*) from the outside, human sciences aimed at 'understanding meaning (*Verstehen*) from the agent's or actor's point of view by grasping the subjective consciousness of action from the inside' (Schwandt, 2007: 315). Interpretivism was elaborated, heavily influenced and applied in sociology by Max Weber (1864-1920); it gained stronger ground over time as more researchers opened to interpretive-based research methods (Hughes, 2012; Chowdhury, 2014). Weber distinguished two kinds of *Verstehen*: 'direct observational understanding',

where the purpose or meaning of human action is immediately observed, and 'explanatory understanding', where actions are placed in context of meaning in order to grasp the motivation for human behaviour. Weber argued that: 'human action is both open to and requires interpretation in terms of the subjective meaning that actors attach to that action' (Schwandt, 2007: 316). In contrast to the positivist approach, whose main focus is to explain human behaviours and the external forces that influence human actions, the primary objective of the interpretivist approach is to understand human behaviours and grasp the subjective meaning of social actions, including an individual's motivation, values, intentions and free will (Corbetta, 2003: 24; Bryman, 2012: 29-30). However, interpretivism aims at capturing the diverse individual perspectives and interpretations of a particular social phenomenon.

By capturing these, interpretivists argue that we can enrich our knowledge and understanding of a phenomenon, and make sense of how knowledge is produced and negotiated between and amongst individuals. (Hughes, 2012: 17)

Interpretivists believe that people 'participate in indeterminate life-worlds, often attaching different interpretations and meanings to seemingly similar facts and events, thus presenting multiple versions of realities' (King and Harrocks, 2010: 11). The interpretive approach, however, has been criticised for its 'narrowly micro-sociological persuasion' (Cohen, Manion and Morrison, 2000: 27). Therefore, interpretivism, it has been argued, fails to recognise the power of external (structural) forces in shaping the behaviour and events of participants' lives. This thesis attempted to address the wider political and cultural context that may have influenced the perceptions and discourse of electronic cigarettes.

In order to study and understand the phenomenon of electronic cigarettes, I used thematic analysis as a methodological approach. I applied thematic analysis of interviews with electronic cigarette users and stop smoking advisors groups, to illuminate the process of electronic cigarettes' social construction. I expand on this method next.

4.3.2. The Method of Analysis: Thematic Analysis

Thematic analysis is considered one of the most commonly used methods to conduct qualitative data analysis. Bryman stated that thematic analysis can be, and has been, employed in relation to different qualitative ways of analysing qualitative data, such as: the

systematic review of qualitative research, grounded theory, critical discourse analysis, qualitative content analysis and narrative analysis (Bryman, 2012: 581). However, thematic analysis has not always been distinguished or identified as a particular method; it is often poorly described, with no clear criteria for identifying themes, and is even ignored as a method by many researchers (Bryman and Burgess, 1994: 224; Vaismoradi, Hannele and Bondas, 2013). Ryan and Bernard (2003: 87) suggested that anthropologist Morris Opler established principles of thematic analysis to analyse cultures in 1945. Opler used the terms 'theme' and 'expression' and linked themes to expressions. Later, according to Ryan and Bernard, different social researchers applied Opler's thematic analysis using different terminologies to link themes with expressions. Ryan and Bernard (2003: 87) provided examples such as the ground theorist, linking expressions to themes using the term 'categories' (Glaser and Strauss, 1967), 'codes' (Miles and Huberman, 1994), or 'labels' (Dey, 1993: 96). In recent years, more distinctive techniques were proposed to assist a thematic analysis of qualitative data. For example, the National Centre for Social Research in the UK developed a framework, which was described as a 'matrix based method for ordering and synthesising data' (Ritchie, Spencer and O'Connor, 2003: 219). Also, Bryman noted that thematic analysis has developed due to the work of some scholars like Ryan and Bernard (2003), and Braun and Clarke (2006) (Bryman, 2012: 580).

Nevertheless, thematic analysis is sometimes criticised for being an undeveloped method that lacks its own special techniques and identifiable history (Bryman, 2012). Some scholars believe that there is a blurred boundary between different qualitative approaches, such as content analysis and thematic analysis. It is suggested that researchers need to identify the distinctive elements of different approaches to qualitative research in order to avoid overlap in terms of procedures and techniques (Holloway and Todres, 2003; Sandelowski, 2010; Vaismoradi, Hannele and Bondas, 2013). Hence, Braun and Clarke (2006) proposed their method of thematic analysis to fill such gap and advocated it as a useful and flexible method for qualitative research.

In this thesis, I apply the data-driven inductive approach of thematic analysis, as proposed by Braun and Clarke (2006). It is defined as:

a method for identifying, analysing and reporting patterns (themes) within data. It minimally organizes and describes your data set in (rich) detail. (Braun and Clarke, 2006: 79)

Thematic analysis involves searching through data to identify recurrent issues, whereby themes emerge inductively from the collected data. Thematic analysis:

...provides a way of linking diverse experiences or ideas together, and of juxtaposing and interrelating different examples and features of the data. The themes do re-present and re-contextualise the data to which they relate, but this can be of value in creating new readings and renderings of the data. (Gibson and Brown, 2009: 129)

It has been argued that an important characteristic of thematic analysis is its flexibility (Braun and Clarke, 2006; Bryman, 2012). While some qualitative analytic methods are linked to a particular theoretical or epistemological position, such as grounded theory and discourse analysis, thematic analysis 'can be applied across a range of theoretical and epistemological approaches' (Braun and Clarke, 2006: 78). Thematic analysis has been usefully applied in sociology (e.g. Crawford and Brown, 2008; McPherson and Armstrong, 2009; Newman et al., 2010; Ergler, Kearns and Witten, 2013). The thematic analysis technique seemed appropriate for my analysis because of the nature of the qualitative data. It allows for the identification, analysis, reporting and interpretation of patterns (themes) within data, and deconstructing accounts in an ongoing and systematic way (Bauer and Gaskell, 2000). This research is not aimed at generating theory; hence, I found this approach to be more suitable than other approaches, such as grounded theory. I found thematic analysis useful, especially when commonalities and differences became apparent among the emerged themes from my data. I attempt to use the latent or interpretative level for thematic analysis, rather than the semantic or explicit level (Boyatzis, 1998). The latent level goes beyond the content of the data 'to identify or examine the underlying ideas, assumptions, and conceptualisations – and ideologies – that are theorised as shaping or informing the semantic content of the data' (Braun and Clarke, 2006: 84).

For grounded theory, it is commonly suggested that researchers should not conduct a literature review before data collection and analysis, as concepts are derived from the data

and not prior to the beginning of the research (Corbin and Strauss, 2014). This is because it is suggested that early reading can narrow the analytic vision, leading to an unbalanced focus on all the aspects of the data. For the thematic analysis approach, it has been suggested that there is no right way, so researchers can engage with literature earlier, rather than collecting the data first (Braun and Clarke, 2006). I decided to conduct the literature review before the data collection. Silverman stated, without a prior conceptual orientation, 'one would not recognize the "field" one was trying to study' (Silverman, 2001: 72). Hence, my early engagement with the literature, I believe, provided me with a strong starting point in researching the electronic cigarette phenomenon, and enabled me to link the emerging themes with the wider literature.

Boyatzis (1998: vii) defined a theme as: 'a pattern in the information that at minimum describes and organises the possible observations and at maximum interprets aspects of the phenomenon.' In this thesis, I aimed at providing a rich thematic description of my entire data, allowing for themes to emerge. Consequently, the emerging themes became the categories for analysis (Daly, Kellehear and Gliksman, 1997; Fereday and Muir-Cochrane, 2006). Before describing the steps of the thematic analysis and the coding process I used, I will explain the research design and data collection process.

4.3.3. Research design: A qualitative study

The research design is a qualitative study. Based on my understanding that interpretations are viewed as 'a bridge between representations of particular phenomena and the actual world' (King and Harrocks, 2010: 12), I realised that respondents' perceptions are the outcome of their individual mix of knowledge, beliefs and experiences; hence, I understand that they produce different versions of reality. In order to capture the elements that my participants perceived as contributing factors to electronic cigarette use, and to understand the phenomenon of electronic cigarette, my role as a researcher, by applying qualitative, interpretive methods, was to explore the broader context within which electronic cigarette use took place (Ritchie and Lewis, 2003: 54). I used qualitative interviews (both face to face and phone interviews) to enable people in this study to share their understandings and experiences from their point of view. In my data analysis, I used inductive thematic analysis, as it was my intention to identify commonalities and differences between the various data sources. Next, I provide my reasons for choosing the data collection method of interviews.

Interviews

Interviews were an appropriate method of data collection because they elucidated the subjective perceptions of participants and the interpretations of electronic cigarettes. Although it was suggested that telephone interviews tend to be shorter than face to face interviews (Bryman, 2012: 215), my face to face and phone interviews in both groups were between 40 to 60 minutes. Bryman pointed at the notion that telephone interviews do not provide good data compared to face to face interviews when asking sensitive questions and health issues; he, however, confirmed that this is not evidenced. Although some researchers argued that the lack of visual connections when conducting phone interviews affects the establishment of a rapport between interviewer and participant (Irvine, Drew and Sainsbury, 2013), I believe that my phone interviews may have provided more freedom to participants to elaborate on their opinions without being influenced by my (the researcher) characteristics, such as ethnicity, thus removing this source of bias (Bryman, 2012: 214). Phone interviews, also, may have added anonymity to the participants and saved time and cost of travel (Bryman, 2012; Sherratt et al., 2015a).

Here, I adopt the constructionism view, where interviewers and interviewees are actively engaging in constructing meaning (Silverman, 2006: 118). Holstein and Gubrium (2010: 150) view all kind of interviews as active, animated interviews. Hence, interviews are an outcome of an 'interactional accomplishment rather than neutral communicative grounds'. This, they believe, highlights 'the inherent interpretive activity of the process'. Evidently, interviews do not provide a transparent and actual view of reality. Interviews introduce the perceptions and opinions of participants about a particular phenomenon; this means that the same reality (phenomenon) can produce several realities (perceptions) by different individuals. Therefore, interviews as dynamic, meaning-making events imply the need to focus on the circumstances of constructing the meanings and responses. The constructionism interviewing approach has been criticised for its narrowness and inconsistency (Silverman, 2006). Nevertheless, it is argued that this approach produces interview talk that is 'a reflection of the social encounter between the interviewer and the interviewee, and reflexively situated in the wider cultural arena' (Rapley, 2004: 16).

In my analysis, I attempted to illustrate how perceptions of electronic cigarettes reflect deeper personal views and experiences on addiction, smoking and lifestyle, which

were formed over the individual history of my participants. I understood that the interviews are active processes, collaboratively produced where both the participants (interviewee) and I (the researcher/interviewer) contribute to the production of the interview data (Silverman, 2006). This meant that, during the interviews, I attempted to prompt participants into articulating their perspectives on various aspects of using electronic cigarettes, thus enabling me to address my research questions. I also acknowledge that the jointly produced interview data are situated within the wider cultural arena and broader social norms (Silverman, 2006). Hence, I attempted to focus on how the accounts of my participants emerged and how they were shaped by the broader social context. For example, I asked electronic cigarette users about their smoking history and the reasons for using electronic cigarettes. I asked about people's acceptability of electronic cigarette use and about their views on the social, political and institutional stance on electronic cigarettes. I explored the role of the media. I contrasted between the interviewees' accounts to add more depth to the analysis. Next, I explain the data collection process.

4.4. Data Collection

A convenience sampling approach was used; therefore, I continued to collect data until I believed that no new themes would emerge from the interview data (Guest et al. 2006). Appendix 5 illustrates the number of interviews that were included in the analysis.

Participants

Thirteen stop smoking advisors responded to the invitation letters. From Hertfordshire, I conducted seven face to face interviews; five were females and two males. From East Sussex, I conducted six phone interviews; four were females and two males. The number of years of experience in working at the Stop Smoking Service were between seven months to fifteen years. Fifteen interviews were conducted with electronic cigarette users; five were using the Stop Smoking Service. In Hertfordshire, I conducted one face to face interview with a service user and seven face to face interviews with non-service users. In East Sussex, I conducted in total four phone interviews with electronic cigarette users who were using the Stop Smoking Service at the time of the study. From other areas in South East England, I conducted three interviews in total, two face to face interviews, and one phone interview,

who were all non-service users. Table 1 summarises the electronic cigarette users' profile. Table 2 summarises the stop smoking advisors' profile.

Table 1: Electronic cigarette users' profile

E-cigarette users ID	Gender	Age	Occupation	Stop Smoking Service user	Age started smoking(y)	Gave up smoking completely	Commenced e-cigarette use (calculated until the time of the interview)	Used other aids to stop smoking: NRT/Champix/ herbal cig/ Allen carr's/ hypnosis
1A	Female	44	Counsellor	NO	15	Yes	8 months	NO
2B	Male	39	Audit manager	NO/ex user	12	No	2 years	Yes
3C	Male	36	Unemployed /disabled	NO/ex user	14	Yes	3 years	Yes
4D	Female	50	Unemployed /disabled	Yes	20	No	6 months	Yes/ongoing
5E	Female	67	Retired	Yes	20s	Yes	Few months	Yes/ongoing
6F	Male	44	Unemployed	Yes	9	Yes	3-4 months	Yes
7G	Female	31	Unemployed	Yes	19	No	15 months	Yes/ongoing
8H	Male	51	Surgeon	NO	22	No	4 months	Yes
9I	Male	21	IT worker	NO	16	Yes	2 years	Yes
10J	Female	37	Gym instructor	NO	21	Yes	2 years	Yes
11K	Male	34	Lecturer	NO	23	Yes	12-15 months	Yes
12L	Male	38	Lecturer	NO	18	Yes	2 years	Yes
13M	Male	58	Retired	NO	15	No	9 months	NO
14N	Male	56	Artist/musician	Yes	16	No	2 years	Yes
15O	Female	60	Para legal in family work	NO	15	No	7 months	Yes

Table 2: Stop smoking advisors' profile

Stop smoking advisors	Gender	Years of experience
H1	Female	10 years
H2	Female	1 year
H3	Male	7 months
H4	Female	4 years
H5	Female	1 year
H6	Female	15 years
H7	Male	5 years
S1	Male	3 years
S2	Male	7 years
S3	Female	3.5 years
S4	Female	1 year
S5	Female	16 months
S6	Female	4 years

The Process of Interviews

Based on my literature review, I designed draft semi-structured questions. My prior reading and familiarity with the topic matter allowed me to engage with my participants and prompt them into articulating their perspectives on various aspects of the electronic cigarette phenomenon. Early interviews took place face to face, at a location and time convenient for both the participant and me. After later amendments and for the new research sites, I conducted 12 interviews over the phone at a pre-arranged time with the participants. All participants gave their consent to the audio-recording of the interviews. To ensure confidentiality, participants were given an ID and then the interviews were transcribed directly by the researcher and a professional transcriber, who was given some interviews randomly to transcribe. After conducting 13 interviews with stop smoking advisors and 15

interviews with electronic cigarette users, no new information was collected and, therefore, I tentatively concluded that saturation had been reached. Since this study was interpretative from the outset, the questions were developed and amended throughout the study. For example, as a result of the themes that emerged from some interviews, and the new studies and media stories that came out during the period of doing this study, I expanded on the notions of stigma, willpower and social risk. In general, the interview topic guide and questions addressed the thesis questions. The draft interview, with the key questions that formed the framework for the semi-structured interviews, can be seen in Appendix 4.

4.4.1. Semi-Structured Interviews with Stop Smoking Advisors

All stop smoking advisors in both Stop Smoking Services were invited to take part in the research by invitation letter that was sent to them via their managers. All the advisors were interviewed once. I gave a different ID to the advisors according to their county. Appendix 6 presents a full list of interviews with the advisors. The advisors from Hertfordshire were interviewed face to face. The advisors from East Sussex were interviewed over the phone. One pharmacist in Hertfordshire was interviewed face to face. Interviews lasted between 40 and 60 minutes.

Each interview was a joint account of the advisors' perceptions and my interaction with them; therefore, the specific interview questions differed for each participant. In general, however, the interview topic guide that I prepared addressed the listed issues below (the actual draft interview is appended):

- The specific role and work of the advisor
- The training and experience required/attained to deliver the work
- The process of dealing with clients who attend the Stop Smoking Service
- The challenges of dealing with electronic cigarette users
- The perception of risk and/or benefit from electronic cigarette use
- Views on addiction, smoking and electronic cigarettes
- Views on the role of digital information

- Views on harm reduction
- Institutional/professional/political climate influence.

4.4.2. Semi-Structured Interviews with Electronic Cigarette Users

A full list of interviews conducted is presented in Appendix 7. I gave each case an ID for anonymity. Each interview was a joint account of the electronic cigarette user's perceptions and my interaction with them; therefore, the specific interview questions differed for each participant. In general, however, the interview topic guide that I prepared addressed the following issues:

For service users:

- The decision to use electronic cigarettes
- The perception of risk and/or benefit from electronic cigarette use
- Views on addiction, smoking and electronic cigarettes
- Views on the role of digital information
- Views on harm reduction
- The challenges of using electronic cigarettes within the Stop Smoking Service
- The reasons for using the Stop Smoking Service
- Smoking history
- Institutional/professional/political climate influence.

For non-service users, I omitted the questions that were linked to using the service. Instead, respondents were asked the reason for not using the Stop Smoking Service.

All the data was then analysed using Braun and Clarke's six stages for thematic analysis, as described later.

4.5. Data Analysis

By means of the analysis, the thesis aims to cast light on how the development of electronic cigarettes manifested at a particular period of time in two datasets. Following data

collection, all the interview transcripts were entered into the QSR NVivo10 data management program. I read each transcript thoroughly while listening to the audio to correct mistakes if necessary, with a focus on the research question being explored. Then, I started a comprehensive process of coding the data and identifying themes by creating a thematic coding framework on NVivo. I will describe a step-by-step process of the analysis in the next section. It is worth noting that the research analysis was an iterative and reflexive procedure. I undertook the data collection and the analysis concurrently. I continuously reflected on the previous stages of the process before undertaking further analysis to ensure that the identified themes were grounded in the original data.

Stages of Data Coding

Codes refer to 'the most basic segment, or element, of the raw data or information that can be assessed in a meaningful way regarding the phenomenon' (Boyatzis, 1998: 63). Empirical codes follow the inductive process that provides codes to the collected data (Gibson and Brown, 2009: 132-133; Harding, 2013). It has been argued that: 'the gold standard of qualitative research is the detailed analysis and presentation of rich in-depth information via emerging rather than imposed themes' (Grbich, 2013: 19). Therefore, I used a data-driven inductive approach to identify the emerging themes direct from the data by looking for a 'good code' (Boyatzis, 1998: 1); I then developed codes in a bottom-up manner to capture the main features of data representations of the phenomenon of electronic cigarettes. Codes reflected both the manifest content of the data (e.g. the perception that electronic cigarettes are safer than cigarettes) and meanings present at a more latent level (e.g. personal responsibility). I used the following six phases of analysis framework, as proposed by Braun and Clarke (2006):

1. I familiarised myself with the data sources (interview transcripts) by reading and re-reading them. I listened repeatedly to the interviews while reading their transcripts. I listed the ideas from the data and what was interesting about them.
2. I generated initial codes. Encoding the text enabled me to organise the data in order to identify and develop themes (Fereday and Muir-Cochrane, 2006: 4). I generated a coding frame that would enable me to answer the research questions in a balanced way (Joffe, 2012). The codes developed were entered as nodes (categories) into NVivo. I coded the text

by matching the codes with sections of data selected as representative of the code. It was essential to test the reliability of the code framework for analysis to determine the applicability of the code to the raw information (Boyatzis, 1998). Hence, following the coding process, I invited my supervisors to code four interviews. The results were compared and more inductive codes were suggested.

3. Identifying initial themes. First, I identified a long list of codes. Then, I started sorting the different codes into potential themes, and collating similar coded data extracts into the identified themes (Crabtree and Miller, 1999; Braun and Clarke, 2006: 89). Sub-codes emerged from the data using the particular meanings and language of the participants. I sorted the segments of text across all my data. I connected the codes and identified themes across my data, clustered under headings that directly related to the research questions. Similarities and differences between separate groups of data were emerging at this stage, indicating areas of consensus and areas of potential conflict. Themes within each data group were also beginning to cluster. The next diagram shows the initial thematic map.

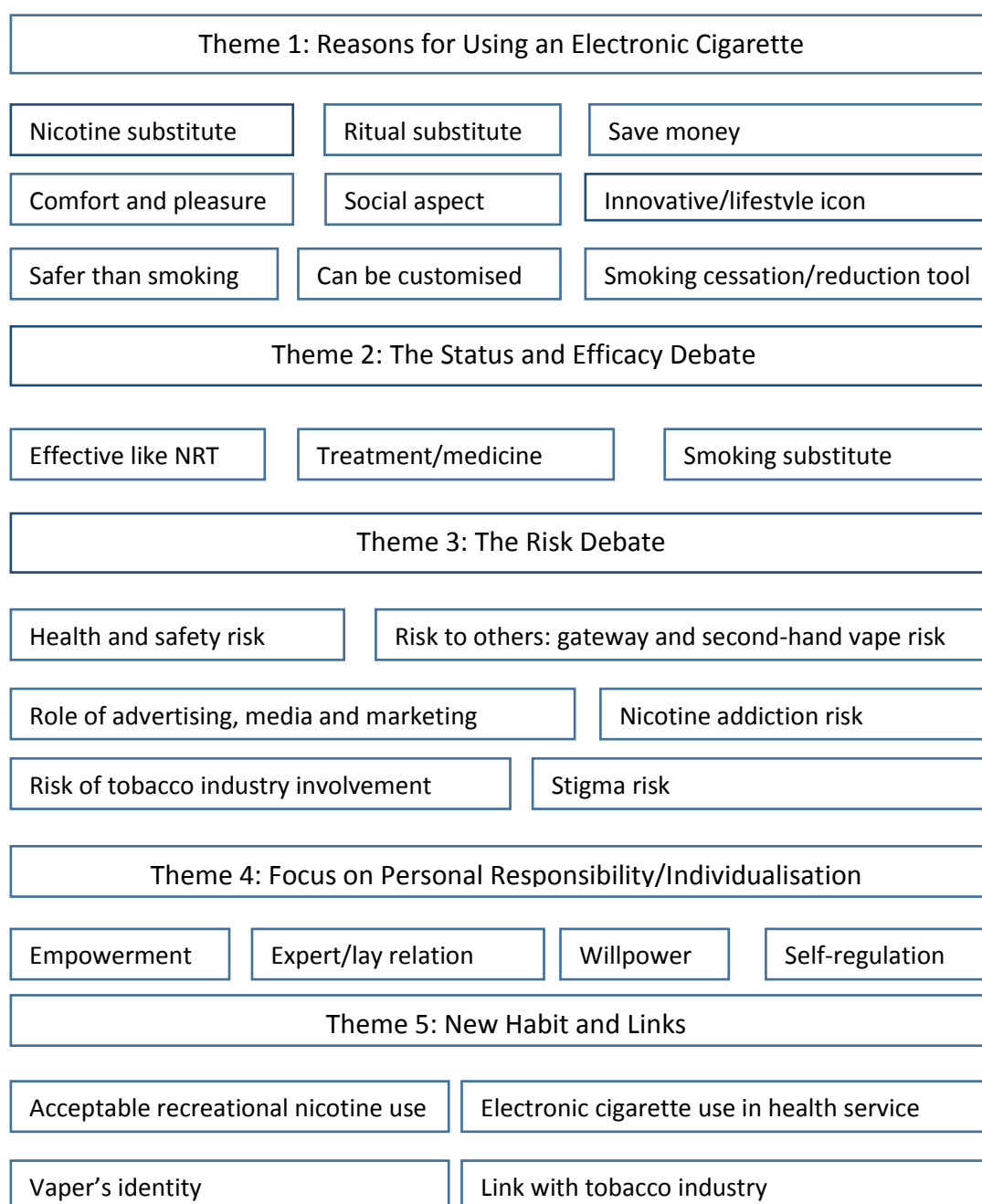


Figure 1: The initial thematic map

Phase 4 I reviewed and organised the themes; I re-read the coded text; I refined some coding and identified potential new themes. I then started coding for these as well, until I was satisfied that the thematic map I devised fitted the data.

Phase 5 (Major themes): I clustered, defined, named and described the themes that were previously identified from the coded text. Here, I determined what aspect of the data each theme captured and identified what was interesting about them and why. An explanation of the themes and the subthemes will be presented, explained and evidenced by the collected data in the data chapters. By the end of this phase, major themes were defined. Appendix 9 provides an illustration of the phases and some of the resulted themes.

Phase 6: The interpretation process was achieved after several iterations for the text, codes, and themes, in order to be able to establish an explanatory framework that elucidated the different meanings of electronic cigarettes across the two data sources. In this final phase of the analysis process, the themes were linked to the research questions and theoretical framework.

4.6. Ethical Considerations

In any given qualitative research, ethical considerations should be inherent in the research design and have to be applied at every stage of the research. Here, I address the ethical issues I considered in this research. My position was to conduct ethical research which avoids unnecessary intrusion and uses methods that are participatory, non-invasive and non-confrontational (Morrow and Richards, 1996: 100). Murphy and Dingwall suggest that ethical research practice:

.. depends on the conscientious and reflective commitment of individual researchers and research teams to identifying and minimizing potential harm to participants, to negotiating fully informed consent at the outset and throughout the research process, and to treating all those under study with disinterested even-handedness. (2003: 167)

Hence, Murphy and Dingwall (2003) advised that informed consent must be open ended, relational and built on trust. Miller and Boulton also suggested that consent 'includes weighing up risk, privacy and protection, safety and potential harm, trust and responsibility

and demonstrating that this has been done in a systematic and auditable manner' (2007: 2208).

I considered the ethical issues before the start of the study. Data collection did not begin until I had an approved proposal to justify conducting my research and show the likelihood to produce useful knowledge. In the interview guide, questions addressed the history and experience of smoking. I was aware that participants might share negative aspects of their experiences and could have chosen not to ask these questions if I had found them inappropriate in the context. I conducted the interviews at a time and a place that was convenient to my participants. After amending my ethical approval, I offered my participants the choice of face to face or phone interviews and I followed their preferred choice. I tried to ensure I remained sensitive to my participants, that the atmosphere of the interview was relaxed and friendly, and that my questions did not cause any distress to my participants. I am aware that with telephone interviews it is more difficult to tell if people were feeling uncomfortable because I could not see them, so I tried to ensure the interviewees were not disturbed by my questions by emphasising they could refuse to answer any question. Throughout the analytic process, I have attempted to consider how the findings will be used and how participants in the setting will react.

Although I took into account all the expert guidance on ethical research, I realised I could not always ensure that everything was done correctly and I was sensitive to the fact that things could go wrong. To ensure privacy, confidentiality and anonymity, I provided my participants with invitation letters and information sheets. I was aware that some participants might not read the information sheets fully and carefully, or might not understand some of the language used. Therefore, I explained verbally the aim and protocol of the research, aiming at informed participation. I also explained the procedures the University has in place to store the data and keep the information guarded. The participants were approached without any pressure and asked to partake in the study voluntarily. I am aware that some advisors might have felt obliged to take part in my study as a result of the encouragement they received from their managers. I am also aware that the electronic cigarette users who were clients at the Stop Smoking Service that were invited by their advisors to participate, or saw my research leaflets at the clinics, or received a text message about my research from the Service, might have felt obliged to participate. They might have

thought that the Service had something to do with the study, so they might have found it more difficult to decline to participate. They might also have thought that their treatment could be affected or that what they said would be relayed on to the clinic. Hence, I tried to clarify all these issues with my participants and emphasised the importance of their voluntary participation. I am also aware that the prize draw might have been the reason for some participants to take part in the research. Although I was not keen on introducing financial incentives at the beginning of the research to ensure voluntary participation, due to lack of participation, I and my supervisors felt it necessary to introduce the prize draw. However, to the best of my knowledge, I believe that this incentive has only generated extra participants, but did not influence the accounts of participants or the outcome of the interview.

A consent form was obtained from all the participants which made it clear that participants could withdraw from the study at any time; they could refuse the recording of interviews and they could refuse any question if they felt uncomfortable. In spite of my attempts to make my participants feel that they had control of the process, I realise that in practice some participants might have found this difficult for a variety of reasons. For example, with the recording of interviews, it might have been hard for some participants to say that they did not wish to be recorded. My position as a researcher coming through official channels to conduct research might have put me in a position of 'power' and hence might have influenced the participants' reactions.

Participants were given an ID to help keep their data anonymised. Every attempt was taken to ensure that the quotes used in the thesis would not identify the participant. I agreed with my supervisors to highlight any harmful, illegal, or wrongful behaviour on the part of others during the study. I have presented a full picture of the circumstances that influenced the study from the onset. I met the requirements to gain all the ethical approvals needed to conduct the study and I adhered to their rules and timeframes. I have tried to ensure that the study adhered to Brunel University London's Research Integrity Concordat Code which supports research integrity. I have explained and adhered to the analysis methods in order to produce authentic and valid results. I also acknowledge that consideration of ethical issues is an ongoing process. As far as possible I have tried to ensure that I remained reflexive and sensitive throughout the project and beyond.

Pollock (2012: 33) argues that the current bioethical framework of ethical regulation was primarily designed to protect study participants from the 'very real harms', which could result from participating in experimental research. Hence, qualitative research, the author argues, 'does not fit' within the existing regulatory frameworks which force qualitative research to adhere to 'a bureaucratic system of procedural ethics which is ill suited to the nature of the research.' Indeed, I found the process of completing the IRAS application daunting and it made me question the rationale of such complex ethical processes for this type of research. As Pollock suggested, it appeared that these ethical regulation processes prioritise rigid procedures and formulas over the issues that might happen in the real world setting when conducting qualitative research, such as the quality of discussions with research participants. Therefore, I share Pollock's call for a different set of criteria to evaluate the qualitative research and to 'value "empirical ethics" as a means of liberating qualitative (and other) research from an outmoded and unduly restrictive research governance framework.' (2012: 25).

4.7. Reflexivity

The importance of being reflexive is acknowledged within the social sciences and it is widely recognised that within data analysis the process of interpretation of data is a reflexive exercise through which 'meanings are made rather than found' (Mauthner, Parry and Backett-Milburn, 1998; Mauthner and Doucet, 2003). It is also acknowledged that in qualitative analysis:

the researcher aims to situate themselves in the participant's world and to understand the subjective (personal) experiences of their research participants. In doing so the researcher can turn these subjective experiences into representations that allow interpretation and reveal insights that apply more generally beyond those individuals studied. (Lambert, Jomeen and McSherry, 2010).

I came to research driven by a mixture of ambivalence and curiosity about electronic cigarettes: what makes a smoker decide to use electronic cigarettes; how they are different to other nicotine replacement products and how people deal with the uncertainty of their risk. By the time data collection started, I had begun the process of reflection that led me to position myself - theoretically - within a social constructionist epistemological perspective. I

had begun to question the extent to which my ambivalence was attributable to me being a non-smoker. Also, had my exposure to different sources of media that present inconsistent and contradictory information about electronic cigarettes affected my attitudes? Furthermore, was my desire to conceal any personal opinions that may have led me to judge my research participants' views on smoking and addiction having an effect? The only way I have found to reconcile these tensions is to acknowledge the socially situated nature of my project (Kingdon, 2005).

Although, as a dentist with a public health background, I was interested in electronic cigarette use as a stop smoking aid; as a social sciences researcher, I was attempting to explore the varied perspectives of my participants and understand the contextual factors that might influence the use, or non-use, of electronic cigarettes. By relating my experiences to the social sciences literature I was engaging with, and the fast-paced advances in the field of electronic cigarettes, I began to develop a coherent perspective of the different perceptions my participants hold for electronic cigarettes. My engagement with the literature on electronic cigarettes and sociology enhanced my analysis by alerting me to the more subtle features of the data (Tuckett, 2005). Also, my dental and public health background equipped me with a good understanding of the medical and social issues relating to smoking, addiction and harm reduction. It is possible that my preconceived ideas about the potential usefulness of electronic cigarettes as a smoking cessation aid and my interest in tobacco harm reduction may have biased my interpretations; however, I attempted to limit this influence. For example, during the research process I tried to remain aware that the fact I was not a smoker or an electronic cigarette user and my dislike for the habit of smoking might influence my interpretation of the electronic cigarette users' accounts. I tried to identify where this appeared to be limiting my understanding of aspects of their stories and had ongoing discussions about this with my supervisors. However, I hope that my ability to be reflexive and articulate the nature of these limitations was enhanced by drawing on the insights of other people I knew who had experienced smoking and/or electronic cigarette use. For example, I was aware of stories about quit attempts that failed due to smokers finding it difficult to stop their smoking addiction. I also saw successful quit attempts using electronic cigarettes and listened carefully to the personal experience of each electronic cigarette user. Throughout the analytical process, I reflected on the possible

influences my beliefs may be having on the themes that I identified and I checked the research integrity and issues of trustworthiness, as I will explain next.

4.8. Research Integrity and Issues of Trustworthiness

Research integrity is of paramount importance in all kinds of research. Interpretivist studies must satisfy the criteria set for trustworthiness. These are credibility (validity), transferability (generalisability), dependability and confirmability (Lincoln and Guba, 1985; Shenton, 2004). Validity is defined as ‘the extent to which conclusions drawn from research provide an accurate description of what happened or a correct explanation of what happens and why’ (Jupp, 2006: 311). Validity, it was argued, is complicated in social sciences because ‘the social world is both constructed by and made of people who see, perceive, and interpret things differently’ (Diefenbach, 2009: 883). Transferability can be achieved by providing sufficient detail of the context of the study for a reader to be able to decide if the findings can be applied to other settings. Dependability, although it was argued is difficult to achieve in qualitative research, can be achieved through detailed reporting of the study, thus enabling a future researcher to repeat the work. Confirmability can be achieved by researchers taking the necessary steps to demonstrate that findings emerge from the data, thus avoiding bias (Shenton, 2004: 63, 71).

Ryan and Bernard (2003: 103) stated that, when using thematic analysis, ‘there is no ultimate demonstration of validity’, but researchers can increase clarity and agreement. Hence, I recorded my interviews and transcribed them. I used my participants’ own words and direct quotes (Patton, 2002). I presented the themes with clarifications for my judgement. The themes were continuously revised and iterated to ensure their link to the text, codes and research questions. Due to the nature of the doctorate degree, there was a limited inter-coder reliability, which refers to the agreement between coders about themes. This is because the researcher (me) was mainly responsible for coding and generating themes. However, I checked validity by randomly selecting a sample of four transcripts to be re-coded by my two PhD supervisors, who confirmed that the transcripts were coded consistently and that they included data that supported the key findings of the study.

To address confirmability, I have used the triangulation approach by corroborating a finding with evidence from different sources. Here, I used data from interviews with two

different groups to look for corroborating or conflicting data and to understand whether the data pointed to the same direction. This triangulation, according to some scholars, provides evidence of the data quality (Shenton, 2004; Williams and Morrow, 2009; Yin, 2011).

Generalisability, in qualitative research, does not depend on statistical criteria, but on the quality of the theoretical interpretations (Mitchel, 1983; Bryman, 2012). Also, it is argued that sociological qualitative research mainly aims to contribute to the sociological literature, rather than generalisability. Bryman (2012: 406) stated that: 'the findings from qualitative research can be generalised to theory rather than to population.' The lack of generalisability of findings to a wider population of electronic cigarette users and stop smoking advisors could be construed as a weakness of the research design. However, the research was not designed to fulfil the requirement of generalisability; rather, I was interested in garnering individual accounts of electronic cigarette use and providing detailed information about the study to allow the reader to establish how similar the findings of other cases are and to which the findings might be transferred (Schwandt, 2007). A theoretical generalisability can be drawn from the study, as other studies can apply both boundary objects and biomedicalization to study other ambiguous objects or ideas.

4.9. Chapter Summary

Electronic cigarettes represent a modern technology that has instigated concerns among different groups, and therefore it is important to explore the construction of electronic cigarettes' meanings and perceptions. Hence, my aim was to explore the perceptions of electronic cigarettes among electronic cigarette users and stop smoking advisors. By applying the interpretivist approach, my key emphasis was to understand the participants' behaviours, grasp the subjective meanings they had for electronic cigarettes and capture the diverse individual perspectives and interpretations of electronic cigarettes. This thesis used the methodological approach of thematic analysis, as described by Braun and Clarke (2006). It did not seek to focus on motivations or individual psychologies, but instead aimed at theorising the sociocultural contexts and structural conditions that influence meaning and experience identified in the study (Braun and Clarke, 2006: 85).

I highlighted some of the many factors that collectively shaped this project. I presented the debates surrounding the choice of research methodology and provided a

summary of the research design. I also outlined a detailed method of analysis using a process of thematic coding that involved an inductive coding (themes emerging from participants' discussions). The next chapter is the first data chapter, where I apply thematic analysis to analyse interviews.

Chapter 5: Individual Choice to Use Electronic Cigarettes as a Treatment or Smoking Substitute

5.1. Introduction

This chapter primarily addresses the question: How are electronic cigarettes perceived by electronic cigarette users and stop smoking advisors? It also addresses the question: What factors have shaped these perceptions of electronic cigarettes?

Scholars identified a gap in our knowledge with regards to the meanings electronic cigarettes have for smokers and how they understand and negotiate the risks and benefits of their use (Rooke, Cunningham-Burley and Amos, 2015: 1). The two interview chapters address this gap. I explore several aspects of electronic cigarette use and development with both electronic cigarette users and stop smoking advisors. These include: views on addiction and treatments, the reasons for people opting to use electronic cigarettes, the potential physical and social risks of electronic cigarettes, electronic cigarettes' status and regulations and future implications. This chapter focuses on electronic cigarettes' perceptions and usage, whereas the following chapter focuses on the risk perceptions of electronic cigarettes. I describe the similar and different perceptions of electronic cigarettes in the social worlds of stop smoking advisors and electronic cigarette users. I argue that electronic cigarettes act as boundary and translational boundary objects. This chapter locates the perceptions of electronic cigarettes within the contemporary social scientific theory of biomedicalization. It also discusses the link between biomedicalization and boundary objects theories. To begin with, I highlight and discuss the various perceptions of electronic cigarettes that support my argument of electronic cigarettes as boundary objects. Then, I discuss the theme of individualisation. I conclude by linking the findings to boundary objects theory and biomedicalization.

Four key themes emerged from the interviews with stop smoking advisors and electronic cigarette users. The themes are: first, the reasons for using electronic cigarettes; second, the ambiguity of electronic cigarettes' status and efficacy; third, empowerment and individualisation; and fourth, the ambiguity of electronic cigarettes' risk. The fourth theme

will be addressed in the next chapter. First, I will give a detailed breakdown of the participants and their backgrounds.

Participants

The mean age of my electronic cigarette users was 44y (range 21–67). Nine were males and six were females and duration of electronic cigarette use ranged between 4-36 months (average 14.6 months). Eight reported that they were ex-smokers and were only using electronic cigarettes at the time of the study; the rest reported dual use of both electronic cigarettes and cigarettes with different patterns of use. Their occupations included: a counsellor, an audit manager, a surgeon, an IT worker, a gym instructor, an artist/musician, a para legal in family work, two lecturers, two were unemployed due to disabilities, two were unemployed and two were retired. When asked about the number of years they smoked, electronic cigarette users reported smoking for an average 27.4 years (a range of 5-47 years). Fourteen stated that they made previous attempts to stop smoking. Thirteen reported previous use of other aids to help them stop smoking, such as NRT, Champix, herbal cigarettes, Allen Carr's method and hypnosis. Three of the current Stop Smoking Service users reported currently using other aids besides electronic cigarettes. The majority of the users were using electronic cigarettes that looked like cigarettes (first or second generation) with few using more advanced generations. The advisors were all trained 'stop smoking' specialists with experience of working at the Stop Smoking Service for between seven months and fifteen years.

5.2. Theme 1: The Reasons for Using Electronic Cigarettes

The electronic cigarette users and advisors expressed different perspectives and opinions on the discourse and role of electronic cigarettes. The groups were not homogeneous; rather, they were heterogeneous in their attitudes, values and beliefs. Both electronic cigarette users and the advisors introduced several reasons and motives for using electronic cigarettes. Nearly all the electronic cigarette users opted to use them to improve their health. Two users mentioned they used them to save money without referring to any health concerns. Electronic cigarette users used electronic cigarettes to stop, reduce or substitute smoking and pointed to several aspects that attracted them to electronic cigarettes. One user said: *"For me it was a way to reduce [smoking]. Before, when I have gone cold turkey, it*

was much too easy to slip back” (1A). She also pointed to health benefits; the possibility of indoor use; the tobacco free smell and the cheaper price of electronic cigarettes compared to cigarettes,

“My lung capacity feels better, I feel better. I thought smoking was giving me headaches, actually I noticed those headaches have gone away. Sometimes I felt quite anxious when smoking, so actually I don’t get that with e-cigarettes... It appealed to me that I can use them inside. I liked the idea that they didn’t smell, because that’s another thing I didn’t like about smoking, and they were cheaper.” (1A)

The following user, who struggled with quitting when using other nicotine products, liked the similarity of electronic cigarettes to ‘real’ cigarettes,

“It makes you reduce the cigarettes in one way or it makes it easier to stop. I think it is a better option because it is quite hard to stop when you have nothing. I tried nicotine plasters years ago and it wasn’t working. The e- cigarette feels like a real cigarette.” (4D)

The following user opted to use electronic cigarettes because he needed to stop smoking before a surgical operation. When he asked his surgeon about electronic cigarettes, he told him: *“as far I am concerned, if you are on e-cigarettes - you no longer smoke.”*(3C). Some users indicated switching to electronic cigarettes as a substitute to smoking, like 2B who tried to quit several times using other aids until he discovered electronic cigarettes and since then he has been *“using it full time”* because he liked *“the fact that it is simple and easy to use. It doesn’t leave a bad odour lingering anywhere and it’s not unhealthy for me or for the people around me.”* 5E also said:

“To me it’s a replacement for cigarettes.... So, the patch is dealing with the nicotine and the e-cigarette is dealing with the habit of smoking.....It has got a vapour coming out; it’s lighter and it just feels like you are actually smoking a cigarette.”

11K also pointed to the similarity of electronic cigarettes to cigarettes, as well as the other health, odour and expense aspects, he said:

“It feels like you are smoking and it doesn’t make you stink and it doesn’t make you cough.....The money came into it a lot because, you know, cigarettes are really expensive.”

The majority of users highlighted that they think electronic cigarettes are safer than

cigarettes. For example, 14N said he switched to electronic cigarettes because he wanted to preserve his singing voice on stage and because his dentist warned him about his gum disease (risk perceptions are discussed in chapter six). He described electronic cigarettes as a *“much more pleasant”* way to deal with his addiction. Several users spoke about the ability of electronic cigarettes to offer enjoyment and relieve stress (see 5.3.2.3) and confirmed that electronic cigarettes can replicate the physical behaviour and rituals of smoking (see 5.3.2.4). Other reasons are the acceptability by significant others who are non-smokers and the continuation of the social aspects of smoking. The users seemed to use electronic cigarettes flexibly, sometimes joining smokers outdoors and at other times they ‘vaped’ indoors. The following are two examples,

“What I like about e- cigarettes is there was obviously a social aspect to smoking. For me it was a way to get away from my desk and I still sometimes go outside and use my e-cigarette just for social purposes, just to be one of the girls and join in really. It is better than before, you know with groups of friends that used to be quite embarrassing when I used to go outside when they were not smoking to have cigarette during meals and stuff. So, there is a positive impact on that.” (1A)

“when I considered giving up smoking, I just started to use my e-cigarette more, and discovered I liked the taste of it more than tobacco.....The friends that I have understand that I’ve made a conscious decision to switch from tobacco to vaping and most of my friends are intelligent, well in my view they’re intelligent, and they know that it’s better for me and for them if I’m vaping, not smoking. It also means often that I can stay with the conversation rather than having to go outside and have a cigarette.” (14N)

Users spoke about the role of flavours and customising nicotine level in attracting them to electronic cigarettes. 7G described electronic cigarettes as *“far nicer to smoke than a normal cigarette because you can pick all your different flavours; you can pick how much nicotine you are going to inhale.”* She also said she liked *“the fact that your hands don’t smell; your hair doesn’t smell; you don’t have to brush your teeth all the time because you can taste cigarettes.”* 9I also spoke about electronic cigarette use turning into *“a bit of a hobby”* as he liked *“getting different flavours and trying all the different ones that I can get...It makes it*

more fun; it keeps you occupied and it helps you forget about the cigarettes". Other users, however, were not keen on flavours as the following user explained:

"For me, the whole point of having e-cigarettes is to eventually stop not to think oh I love the cherry one, and this is because that will make me do it more.....For me, it's not about pleasure. That way I don't want to encourage myself to partake more by having cherry or chocolate or whatever, it is about maintenance reduction; ultimately finish." (150)

When the advisors were asked about the reasons they believe people use electronic cigarettes, they suggested several reasons and factors that might influence the decision to use them. For example, one advisor believed that electronic cigarettes made the life of smokers "a lot easier to deal with in terms of trying to become a non-smoker." She also highlighted the role of flavours and *"the different gimmicks that comes with it"* and the expense, friends and convenience, stating: *"convenience is that they've got it in their hand; they can charge it; they can fiddle with it; they can walk around with it."* (H1). One advisor highlighted several aspects that attract smokers to use electronic cigarettes,

"There are people who stopped for months and months who would never use the patch and never used the patches or the other medications, but they decided to use the e-ciggi [sic] because it is available, it is quick, it looks like a ciggi [sic]. People use them to comfort themselves." (H4)

One advisor believed that people are *"substituting in work environment or socially, in homes or in the car or different environments."* (S2). Another advisor believed that people use them because they have got a replacement as they swap cigarettes with electronic cigarettes, so *"they're substituting that behaviour."* He thought that the whole marketing behind electronic cigarettes motivates people to use them, so they *"look for the cheapest [option]"* without necessarily thinking about the health issues. He pointed to several reasons that attract smokers to use them including the fact that they have no tobacco in them; they can save money; they can try a range of flavours; they can share their experience with friends; they can use them in public places and workplaces; they satisfy the hand to mouth action and they can make them feel *"a bit more secure."* For the younger population, he believed that *"it is a fashionable thing to do"; "a lot more attractive"* and socially acceptable (H3). Another advisor believed that young people in particular, are mainly using electronic

cigarettes because they are fashionable and because *“they’re there and they want to vape all the different flavours.”* However, he suggested that *“the older generation are coming away from smoking and seeing them as a smoking cessation [tool], as a way of stopping smoking completely.”* (S5).

There was an emphasis on the role of *hand to mouth* and the social benefit. For example, H2 said: *“for people who have hand to mouth habit or they are out with their friends, they still want to feel part of the group, so they will use that.”* She acknowledged that *“for some, it’s just to help them reduce their cravings”* on their way to giving up smoking. H6 also believed that a lot of the users use electronic cigarettes because they want to stop smoking. She highlighted aspects of safer alternative to smoking; saving money; similarity to real cigarettes and the *“sensation and the hit that they will get from the e-cigarette that they won’t get from the other products.”* She also highlighted the role of friends and family recommending it and the ability to use electronic cigarettes when socialising or to relieve craving symptoms.

Their use as a treatment was recognised by several advisors. One advisor said: *“It is treatment if they use it in a positive manner because some people use electronic cigarettes and do not go back for the normal cigarette.”* (H7). Another said: *“they use it as a tool to give up smoking..... they are taking control of their health”* (H3). One advisor reflected on her clients’ experiences who *“just wanted to stop smoking by whatever means.”* She believed that the electronic cigarette attracted them because of its novelty as they wanted *“something different to try, but might be successful”* and because *“it replicates that smoking action which a lot of people miss”* (H5). S4 believed that electronic cigarettes are “attracting those who are trying to cut down on smoking or possibly quit”, but again highlighted the role of marketing and different flavours in attracting young people to try something new. S6 also attributed the attraction to electronic cigarettes to the variety of flavours.

The perception that people use electronic cigarettes because they are seen as less harmful than smoking was highlighted by several advisors. One advisor said:

“Some of them know that the actual nicotine is not that much harmful, the other substances in the cigarettes they are harmful ...From a health perspective, they think that the e-cigarette is better than cigarettes.”(H7)

S3 also agreed that one of the reasons people use electronic cigarettes is their belief that they are *“healthier alternative to smoking.”* She discussed how people self-medicate on electronic cigarettes to stop smoking, but also acknowledged that they can be used as an *“alternative to smoking”* as they satisfy the *“hand mouth specification.”* She described how people feel that they are in control as they can adjust their nicotine levels and they have the freedom to *“vape anywhere and everywhere and sit indoors and do it all day long.”* She also described how they can be used in stressful situations and to avoid relapse, especially when socialising with friendship or family groups who are smokers.

To summarise the theme: the majority from both groups indicated that the electronic cigarette was used as an aid to stop smoking, to cut down smoking or as a substitute to smoking. Its efficacy in substituting smoking was attributed to the electronic cigarette’s ability to replicate the habits and rituals of smoking, the comfort and pleasure it offers and its efficacy in delivering nicotine. Electronic cigarettes relieved withdrawal symptoms and helped in avoiding a relapse to smoking. Electronic cigarettes were perceived to be less harmful than smoking (this will be discussed in the next chapter). Most users liked the similarity of electronic cigarettes to traditional cigarettes. The data suggest that electronic cigarettes may have attracted users because of their different flavours; their reduced cost compared to cigarettes; their tobacco-free smell; social acceptability; the possibility of customising them according to the individual’s needs and desires and the possibility to use them indoors. The data also suggest that some users used electronic cigarettes as a hobby and a social activity. These findings conform to results in the literature which discusses motivations for using electronic cigarettes (e.g. Etter and Bullen, 2011; McQueen, Tower and Sumner, 2011; Pearson et al., 2012; Dockrell et al., 2013; Barbeau, Burda and Siegel, 2013; Dawkins et al., 2013; ASH, 2014a,b; Brown et al., 2014b; Rooke, Cunningham-Burley and Amos, 2015). One of the reasons reported in this study is the endorsement and encouragement to use electronic cigarettes instead of smoking, especially from friends, family and, sometimes, from some health personnel. This opposes other findings from other studies, where some vapers reported stopping using electronic cigarettes based on advice they had received from a health professional (ASH, 2016b).

Through discussing the reasons for using electronic cigarettes, it was apparent the uncertainty that electronic cigarettes’ status and efficacy had for both electronic cigarette

users and the advisors. It was also apparent that the attitudes towards electronic cigarettes reflected a focus on individual responsibility and self-regulation. In the rest of this chapter, I will be discussing these two major themes: Theme 2: the ambiguity of electronic cigarettes' status and efficacy; and Theme 3: the theme of individualisation.

5.3. Theme 2: The Ambiguity of Electronic Cigarettes' Status and Efficacy

First, I will discuss how electronic cigarettes were represented, in both groups, as a therapeutic product. Then, I will discuss how electronic cigarettes were represented as a substitute for smoking. From there, I will shed light on the aspects that made electronic cigarettes good substitutes for smoking. I will then conclude by discussing how electronic cigarettes act as translational boundary objects.

5.3.1. Electronic Cigarettes as Therapeutic Products

It is important to highlight that electronic cigarettes were not licensed or prescribed as a medicine or a treatment at the time of collecting the data. Participants used the words (medicine, treatment and aid) to describe the use of electronic cigarettes for smoking cessation, similar to other medicinal products, rather than smoking substitution. First, I discuss if electronic cigarettes were viewed and used as therapy (a medicine, a treatment or an aid), then I present the extracts that discuss their efficacy in comparison to other nicotine medicinal products. Finally, I introduce the views on their potential medicinal use within the Stop Smoking Service.

5.3.1.1. Electronic Cigarettes as a Therapy?

Electronic cigarettes were represented by some stop smoking advisors as a medicine and an aid for nicotine addiction: *"I would rather view it as a medicine; as an aid to giving up smoking"* (H1, advisor). One advisor described using electronic cigarettes as a *"self-medication"* act, she said: *"I think a lot of people self-medicate using the e-cigarette because they do not always have the time and motivation and go to see someone routinely every week"* (S3, advisor). Electronic cigarettes were acknowledged by stop smoking advisors to be used as an aid to help smokers quit smoking: *"..they use it [electronic cigarette] as a tool to give up smoking, I think that's what it is"* (H3, advisor). *"They are using it [electronic cigarette] because they want to either reduce the harm of [smoking], or they want to stop*

smoking” (H6, advisor). However, the advisors differentiated between two types of electronic cigarette users, namely those who want to stop smoking and ultimately stop electronic cigarettes, and those who want to replace smoking and use electronic cigarettes as an alternative source of nicotine.

“It’s two different groups, out there is one that uses it for convenience so they can use an e-cigarette in places where they are not allowed to smoke because it gets them through that day. But I’ve only seen the population who wants to give up smoking and use it as an aid.” (H1, advisor)

In this research, the majority of electronic cigarette users confirmed they used electronic cigarettes to help them quit smoking. *“I started on e-cigarettes on my own last year and I gave up for the longest period that I have ever done”* (7G, user). However, some verbalised their intention to stop using electronic cigarettes, while others expressed their desire to continue their use. Some electronic cigarette users viewed and described electronic cigarettes as a treatment: *“For me, it’s a treatment. It’s a way to keep me off tobacco”* (14N, user). Others disagreed with classifying electronic cigarettes as a medicine, as the following user said: *“It [electronic cigarette] is not a medicine and is certainly not a treatment”* (2B, user). One user was sceptical about classifying electronic cigarettes, or indeed any other nicotine-containing products, as a medicine, as she explained:

“I wouldn’t see them as a medicine, I see them the same as the gum or the patches, but I wouldn’t call them medicine either, it’s language really, I mean I accept smoking is addiction but I don’t think you necessarily need medicine to get off addiction... I think medicine for me is quite a triggering word with addiction, I don’t think you are sick, there is an element of choice involved.” (1A, user)

5.3.1.2. Electronic Cigarettes Compared to Nicotine Replacement Therapies

Participants compared the effectiveness of electronic cigarettes with other licensed nicotine replacement therapies used by the Stop Smoking Service, and many provided evidence of comparable, if not superior, efficacy of electronic cigarettes in helping people to quit smoking. One advisor explained how electronic cigarette users who used their Stop Smoking Service *“often they say it is [electronic cigarette] useful”*, and even when the advisor offered them *“products... which have been researched fully [i.e. nicotine replacement therapies]”*,

“they probably choose to continue using e-cigarette because it’s working for them” (S1, advisor). The following advisor believed that electronic cigarettes were as effective as other available treatments: *“They are as effective as NRT [nicotine replacement therapies]”* (S2, advisor). Electronic cigarette users also saw this similarity in its efficacy, *“it’s a bit like nicotine gums or mouth sprays or anything in the old days”* (3C, user). These findings contradict the results of Rooke, Cunningham-Burley and Amos (2015: 61), who found that, ‘for most participants, nicotine replacement therapies and electronic cigarettes belonged to different categories’; their participants viewed the former as medicinal products, while they perceived electronic cigarettes as a less obvious means of quitting smoking than nicotine replacement therapies. In this thesis, some advisors acknowledged that electronic cigarettes can be a valuable method to quit smoking for particular smokers, such as heavily addicted smokers or those who need to satisfy the hand to mouth habit. In fact, electronic cigarettes were thought to possibly be more effective than other available products, as the following advisor stated:

“For people that really enjoy smoking or have tried to quit before and struggled, I think a lot of them do feel the patches and tablets haven't worked and do kind of see the benefits of trying to stop and quit using the e-cigarette, and for a lot of people in that situation, it is an alternative to smoking. So that is something that fulfils their needs, definitely.” (S3, advisor)

Indeed, some electronic cigarette users in this study explained how the available products failed to help them quit smoking, but electronic cigarettes helped, as the following extract shows: *“the patches and all of the Nicorette stuff, none of which worked for me”* (14N, user). Other users explained why electronic cigarettes worked better than other therapies:

“The other thing about stopping smoking is the satisfaction of the activity of smoking... other aids, to my mind, my experience, don’t give you that. You chew a piece of gum, which you’re not even allowed to chew; you’ve got to keep it in your cheek and it produces all this vile stuff and you’ve got to try not to swallow. It’s horrid. It’s disgusting. Nobody needs to do that. So that’s a block, I think, it was certainly a block for me to stop me smoking... I hated it. Whereas, I liked smoking. Whereas I like using that in a way... it’s a satisfying thing to do, a pleasant thing to do.” (11K, user)

"I don't think I would have given up smoking without this because gums and patches wouldn't have done this for me. There is something about physically holding an e-cigarette that was incredibly helpful, probably more because of the psychological addictive element." (1A, user)

5.3.1.3. Electronic Cigarettes Help to Avoid Relapse

Some advisors acknowledged that electronic cigarettes help users to avoid going back to smoking and, hence, electronic cigarettes provide security to users. One advisor explained how keeping electronic cigarettes as a security measure can be useful in difficult situations:

"I definitely say, look, if you have an e-cigarette, I'd rather you keep it in your bag and if you are really stuck and you are socialising and you are drinking alcohol, I'd rather you use that than the real cigarette, so in a way that's a harm reduction." (H4, advisor)

One advisor explained how the electronic cigarette *"makes them [users] feel a bit more secure"* (H3, advisor). Several electronic cigarette users explained their use of electronic cigarettes as a security measure or safety blanket to protect them from going back to smoking cigarettes. For example, one user confirmed his intention to keep using electronic cigarettes to avoid a relapse: *"I cannot see myself not using them as I fear that leaving the e-cigarette will draw me back to smoking"* (2B, user). Another user (11K) described electronic cigarettes as *"a crutch"*. The following extracts are more examples:

"My plan will be to stop using them altogether, but I am not going to not have them around the house because the danger would be if I get badly triggered I go buy cigarettes rather than using e-cigarette." (1A, user)

"It was something that was with me for ten years, or more than that. So this is my, if I feel that I'm creeping back, this gets me out of that hole. So again I might do this for a little while and then I'll put it in my bag and I'll forget about it, and then I'll think, 'Well, I haven't had my vape for a while,' which is, you know, a nice feeling. But at the moment it seems to be in my pocket with me." (10J, user)

This is compatible with findings from other surveys (e.g. ASH, 2015a; 2016b), where smokers used electronic cigarettes to deal with certain situations. Other studies have also shown that people use electronic cigarettes to avoid a relapse (e.g. Etter, 2010; Etter and Bullen, 2011; ASH, 2015a; 2016b).

5.3.1.4. Electronic Cigarettes' Use within the Stop Smoking Service

As discussed in Chapter 1, the current tobacco control programmes in England focus on abrupt quitting with a view to eliminating nicotine through a time-framed treatment plan.

The following advisor explained the process:

"The emphasis on our service is to stop smoking rather than cutting down, it is not a cutting down service, the emphasis is on stopping. For us, we are very much driven by the government target of around four weeks quitting. Although we offer the support for twelve weeks, it is actually to get that client by four weeks to be part of that four weeks quit." (H5, advisor)

The advisors used the term 'weaning' to describe their strategy in helping people to end their nicotine use, as the following advisor clarified:

"If someone comes to the clinic with me and they're smoking an e-cigarette, I always discuss with them what kind of level the nicotine is and then we can look at weaning them off the nicotine to low or zero nicotine and products that still use the vape but without the nicotine in it, you know. It's the ultimate goal." (S3, advisor)

Adding licensed electronic cigarettes to the other available treatments within the Stop Smoking Service was welcomed by nearly all the advisors. However, it was acknowledged that electronic cigarettes will not help all smokers to quit smoking, as the following advisor explained: *"I think they will be another piece in our armoury. I don't think they will be the answer for everybody, I don't think they will suit everybody to use"* (S2, advisor). The majority of the advisors saw the electronic cigarette's potential to be another *"weapon in their armoury"*, with a focus on the importance of regulating electronic cigarettes, as the following extract shows:

"If that has been a licensed product, I would be happy that it is alongside the range because it is an individual choice. So it has to be their individual choice and if it supports them to stop then, that's another weapon in the armoury." (H5, advisor)

However, one advisor believed that electronic cigarette users will end up going back to smoking. He said:

"personally I don't recommend electronic cigarettes that much, really if the person keeps

smoking [i.e. using electronic cigarette] then they, one day, will go back to normal smoking" (H7, advisor).

Some advisors had concerns about the long-term use of electronic cigarettes:

"Because even with the nicotine in NRT, we wean them off after a set period. After eight weeks, we might say to them, ok so cut down on this, we lower the doses, we manage that. With an e-cigarette, you can't do that, you can... but... I suppose we got so used to it, we know how the system works, it is much easier this way." (H3, advisor)

"I will still have the same argument about the psychological bond people can actually create with the e-cigarette and I will never be happy to recommend it." (H4, advisor)

The above examples demonstrate how the advisors brought electronic cigarettes into the field of the current public health management of smoking, which emphasises the elimination of smoking and any source of nicotine use, including electronic cigarettes. Similarly, several electronic cigarette users expressed their desire to stop using electronic cigarettes in the future; some had their own individual plans to manage their electronic cigarette use according to their needs, lifestyle and desires. For example, the following user planned to 'wean' himself off nicotine with a view to stopping electronic cigarettes in the future, although not adhering to the timeline followed in the Stop Smoking Service. He said:

"I'm still using nicotine. I have got one bottle here with no nicotine and eventually my challenge is to get down through the milligrams, down to twelve and then to six and then stop. I think that's the way I go." (14N, user)

To conclude, the electronic cigarette was perceived as a form of treatment to help smokers quit smoking. It was compared to other medicinal nicotine products and found to be as effective as, or more effective than, other nicotine replacement therapies. It was thought to be helpful in avoiding a relapse. Although the electronic cigarette's potential to be '*another weapon in the armoury*' was acknowledged by the advisors, the possibility of going back to smoking and the long-term use of electronic cigarettes raised concerns. For the advisors, the electronic cigarette should be used as a tool to wean people off nicotine. For the users, the electronic cigarette can be a tool to wean them off nicotine or a device to substitute for nicotine. This leads to the next section, where I discuss the substitution concept.

5.3.2. Electronic Cigarettes Use as a Recreational Habit

First, I describe how electronic cigarettes were perceived as a smoking alternative. Then, I present the reasons for their efficacy as a substitute.

5.3.2.1. Electronic Cigarettes are a Replacement/Alternative for Cigarettes

Some advisors disagreed with the view that electronic cigarettes can be viewed as a medicine or a treatment, as the following advisor said: *“to cure the nicotine addiction, no way....it is exactly a replacement”* (H4, advisor). Some advisors believed that people used electronic cigarettes as an alternative to smoking: *“at the moment, I cannot see it as a medication, because it’s not licensed as a medication and not been promoted as a medication, so I think at the moment it is seen as an alternative to smoking”* (H6, advisor). One advisor (S6) explained why smokers use electronic cigarettes:

“I think, for a lot of people, they have transferred their cigarette habit to the e-cigarette. They weren’t thinking about quitting, they were looking for a safer alternative. And they have chosen a product that’s the closest thing to smoking.”

Others, as I gave one example earlier, acknowledged that there are two types of electronic cigarette users; those who want to stop cigarettes and electronic cigarette use, and those who want to replace cigarettes with electronic cigarettes,

“In between the e-cigarette users, some of them are completely quiet and they are serious about it and they have the psychological lean as well, so they are ready and they will stop it [electronic cigarette]. The other group of people still carry on with exactly the same habit, using much more nicotine than they would ever need and they are not willing to stop it, either.” (H4, advisor)

The ability of electronic cigarettes to work as a substitute to smoking was acknowledged also by electronic cigarette users, as the following example shows: *“I think it is an aid to stop smoking because they’re a good substitute. Nothing else that you can use to stop smoking, or there’s nothing else that I’ve dealt with that is a worthwhile substitute to smoking”* (11K, user). Although, for this user, electronic cigarettes did not replicate fully the experience of smoking traditional cigarettes, he asserted: *“it is certainly a very good substitute”* (11K, user). The previous user stopped smoking and continued using electronic cigarettes.

However, another user (8H), who did not gain the same experience of smoking when using electronic cigarettes, decided to stop their use and go back to smoking. Others used both cigarettes and electronic cigarettes; they, however, used the traditional cigarettes in particular situations, such as social gatherings. For example, the following user said: *“last night, I did have a cigarette when I was out with friends, but I also had my electronic cigarette with me, which I use as my main source of nicotine”* (14N, user). The next user opted for traditional cigarettes in the Islamic fasting month to get the ‘hit’ he longed for during his fasting: *“during the Ramadhan season, I reverted back to cigarettes as I felt they provided the ‘hit’ that I need during that month. However, once Eid [end of fasting month] took place, I was back on the e-cigarette without hesitation”* (2B, user). The previous examples imply that electronic cigarettes were used as a source of nicotine to replace cigarettes.

It is argued that the possible efficacy of electronic cigarettes could be attributed to their ability to deliver nicotine effectively and, at the same time, imitate the habit of smoking cigarettes (Farsalinos et al., 2013). Data from this study support this argument, as I will show next.

5.3.2.2. Electronic Cigarettes are Effective in Delivering Nicotine

Some electronic cigarette users, in this study, acknowledged that electronic cigarettes are effective in delivering nicotine. For example, one user said:

“I know that when I’ve got stressed in the past I smoked more and now when I’m stressed, I use my vape more, yes, because of the nicotine, it’s still the nicotine addiction.” (14N, user)

The following user also believed that electronic cigarettes provided the nicotine that her body craved for when she got ‘badly triggered’,

“For me, there is an element when the nicotine has been needed at times, because there is a physical dependency, and so when I felt a real strong urge for nicotine, the fact I have been able to take a quick puff on them, the e-cigarette has been helpful.” (1A, user)

However, one user did not find electronic cigarettes effective in delivering nicotine:

"I don't find it gives me the total satisfaction that a normal cigarette gave me. Thus, I 'suck' on it a lot more than I probably should." (2B, user)

Another user believed that he is taking more nicotine:

"I take far more nicotine now, far more. Well, the thing about the electronic cigarette is you, it doesn't stop, right, you can smoke for three hours continuously or something, I don't know exactly how long the battery lasts. But it lasts for hours." (11K, user)

Electronic cigarette users described how electronic cigarettes replicated the physical behavioural elements of smoking and substituted the psychological feelings associated with smoking (e.g. pleasure and stress relief). Next, I will shed light on the psychological and physical aspects that participants mentioned to explain their reliance on electronic cigarettes to maintain resistance to smoking urges.

5.3.2.3. Electronic Cigarettes Offer Enjoyment and Relieve Stress

Stress seems to be a major factor for using cigarettes and electronic cigarettes. They are both perceived as a means to reduce stress and offer enjoyment; they present a coping mechanism to the stressors of daily life. Several studies showed that smokers smoke cigarettes to relieve stress, which was believed to contribute, in part, to why they continue the habit of smoking (Bryant et al., 2011; Slopen et al., 2013; Lawless et al., 2015; Rooke, Cunningham-Burley and Amos, 2015). Similarly, some studies concluded that electronic cigarettes were used to reduce stress (Rutten et al., 2015). However, in Rooke, Cunningham-Burley and Amos's study (2015), some participants expressed doubts about electronic cigarettes' ability to substitute the stress relief characteristics of normal cigarettes. Data from this study showed electronic cigarettes were used in stressful situations. This was acknowledged by the advisors, as the following examples show: *"People use them to comfort themselves, I must admit they seem to be successful"* (H4, advisor); *"I've got a friend who would not smoke because of medical reasons, but when she had a stressful situation she took up smoking an e-cigarette, and she smokes that all the time or vapes"* (S3, advisor).

Electronic cigarette users also confirmed using electronic cigarettes to relieve stress. For example,

"I did stop, I didn't have it for a good few months and then, as life gets stressful, you find a

way to kind of, you know, you try and cut yourself off from it a little bit. And no, I went back on it and I just went and bought the liquid.” (10J, user)

Electronic cigarettes acted as a substitute for the relaxation that traditional cigarettes used to offer, as the following example reveals:

“I think if I am feeling a little bit concerned about something, it’s the anxiety thing, I probably reach for a cigarette rather than the e-cigarette. But that said, if I don’t have any cigarettes I don’t panic about it... there have been times when it’s been a whole week when I haven’t had any cigarette anywhere in the house and I’ve used that [electronic cigarette] and it was fine.” (15O, user)

Electronic cigarettes provided pleasure to users: *“I think when they are using an e-cigarette, they enjoy it”* (H3, advisor). For the next user, electronic cigarettes fully replaced the personal rituals and pleasure he associated with smoking a cigarette:

“It’s mildly relaxing and, as I say, in the contexts in which I tend to use it, close the door... it’s that – I’m not sure that I can separate the feeling that actually using it gives... the feeling of being ‘I’m alone’ ...that feeling has been, just like, ‘Oh, I can now indulge in something that I really know I shouldn’t do.’ It’s like letting your hair down sort of feeling.” (11K, user)

The same user explained:

“It’s something I do when my kids aren’t around and those kind of things are very important. It still has that bubble thing for me, where I go into that little bubble and that’s important. It’s a satisfying thing to do, a pleasant thing to do.” (11K, user)

It is not only the psychological aspects of smoking that electronic cigarettes can substitute. Rather, it is the behavioural aspects as well. This will be discussed next.

5.3.2.4. Electronic Cigarettes Replicate the Physical Behaviour and Rituals of Smoking

The smoking habit has many behavioural elements associated with it and they play a big role in the persistence of the habit of smoking. Among these are: the hand to mouth movement; the habit of holding the cigarette, with specific characteristics like size and texture, in-between fingers; the visual effect of smoke and the inhalation and exhalation practice. It is argued that, since nicotine is widely recognised as an addictive substance,

many smoking cessation products focus on the neuropharmacology of nicotine, but fail to address the behavioural element that is deeply embedded in most addictive practices (Buchhalter et al., 2005). Both users and advisors spoke about the rituals of smoking cigarettes and highlighted that the ability of electronic cigarettes to maintain those rituals was a strong factor in the desire to embrace electronic cigarette use. The following are examples from some advisors:

“They have got something there, they have got a replacement, they swap the cigarette and they’re substituting that behaviour.” (H3, advisor)

“They’ve got it in the hand, they can charge it, they can fiddle with it, they can walk around with it... something to hold.” (H1, advisor)

“I think there’s a massive psychological pull in smoking to do with the hand to mouth and, with people who smoked, there’s a lot of association with doing that and the process of putting something in your mouth and inhaling. So there is that side of it, so the e-cigarette really satisfies the hand mouth, where obviously taking a tablet and a lot of the nicotine products do not suffice in the same manner, although they can choose the inhalator. I think anyone with an e-cigarette tends not to choose an inhalator.” (S3, advisor)

Several electronic cigarette users acknowledged and mentioned the importance of the behavioural elements in their electronic cigarette use, such as something to do with their hands. The following users stated:

“The psychological element has been helpful, I don’t have to feel I am missing out if I want to go out and stand with people and talk. I’ve got something I can use, my e-cigarette, yes it has been very helpful.” (1A, user)

“I decided that actually I don’t need e-cigarette, only when I have my coffee I need something to do with my hand.” (4D, user)

“It’s something I got in my mouth and I suck on.” (6F, user)

“It was effective in the sense that it kind of mimicked cigarettes from, you know, from everything else – just from the action you take with your hand to your mouth and your lungs all the way to what the actual nicotine gives you.” (12L, user)

In this thesis, some electronic cigarette users were not consuming nicotine in their electronic cigarettes (9I, 3C), which might indicate that the behavioural rituals of smoking were deeply embedded in their characters, as the following example reveals:

“In some respect, it is the hand to mouth and it is still seeing the smoke vapour comes out of the mouth, so it’s like a double trick to the brain, so it’s like I perceive in some respect of why I am no longer on any nicotine.” (3C, user)

Nevertheless, for some electronic cigarette users, electronic cigarettes changed their manipulation habits, hence breaking the habit of smoking, but alternatively paving the way for new rituals, as the following example shows:

“The wonderful thing about it is that it’s changed my hands and my fingers because I don’t smoke it between my fingers. I hold it in my hand. So, that has helped break the habit of, just the habit of holding a cigarette in my fingers.” (14N, user)

“You could hold it like a cigarette, but it’s not easy so it changes the way that you smoke... which I think is quite a good thing for me certainly, it starts to disassociate itself from smoking as such. As I said, I still have the occasional cigarette, but a packet of twenty now would last me a week, where before it was a day.” (15O, user)

The data from this study supported other studies that showed the importance of the unique sensory cues, mimicking and rituals associated with traditional smoking and their role in the growth of electronic cigarette use (Caponnetto et al., 2011a; Polosa et al., 2011; Caponnetto et al., 2011b; McQueen, Tower and Sumner, 2011; Fagerström, 2012; Barbeau, Burda and Siegel, 2013; Caponnotte et al., 2013).

To conclude Theme 2, the data here showed that most people used electronic cigarettes with the aim to stop or reduce smoking. This conforms to other studies that provided evidence that electronic cigarettes have been used, mostly, as an aid to reduce or quit smoking (e.g. Adkison et al., 2013; Brown et al., 2014b; Dawkins et al., 2013; Goniewicz, Lingas and Hajek, 2013; Pepper and Brewer, 2013; West, 2014; ASH, 2016b). However, electronic cigarettes were represented differently by both the users and stop smoking advisors. The advisors acknowledged that electronic cigarettes were used both as a substitute for smoking and a therapy. However, the advisors wanted electronic cigarettes to be regulated and used as a medicinal product, similar to other nicotine replacement

therapies. The advisors brought, or wanted to shift, electronic cigarettes into the world of a nicotine replacement therapy regime to become a piece of their 'armoury', in order to avoid the long-term use of electronic cigarettes, which would shift electronic cigarettes from the medicinal world to the recreational world. Hence, similar to nicotine replacement therapies, electronic cigarettes claim their legitimacy as a medicine as long as they treat nicotine addiction, rather than maintain it (Bell and Keane, 2012). However, electronic cigarette users have placed electronic cigarettes in a smoking quitting continuum, where boundaries are blurry and where electronic cigarette users can tailor their use according to their lifestyle, needs and desires. Electronic cigarettes had different meanings; they were represented as a continuation for the rituals of smoking; a comfort; a safety blanket; a harm reduction tool; a nicotine substitute; a lifestyle icon; a treatment; a piece in the armoury; an aid to stop smoking; a risk. These different representations of electronic cigarettes show that electronic cigarettes function as boundary objects, as I will discuss next.

Electronic Cigarettes as Boundary Objects

The data from both groups showed no consensus with regards to the representations of electronic cigarettes. The different meanings of electronic cigarettes demonstrate how 'different social worlds maintained a good deal of autonomy in parallel work' (Star and Griesemer, 1989: 399). The dual description of electronic cigarettes (as medication or a substitute for cigarettes) shows the ability of electronic cigarettes to function differently in different settings (Carlile, 2002). Electronic cigarettes can be both a route to the continuation of nicotine dependence and a route to cease nicotine dependence.

For electronic cigarette users, because of the resemblance of electronic cigarettes to traditional cigarettes, users anchored electronic cigarettes to their old smoking habit, thus preserving their identity as a smoker and attempting to maintain or replicate the experience of smoking on a physical, social and psychological level. Their goals differed to those of the stop smoking advisors. Electronic cigarette users did not define a specific framework for their pattern of using electronic cigarettes, or deadlines for the duration of their use. Users had their own individual plans according to their needs, lifestyles and desires. This explains the formation of electronic cigarettes as boundary objects, which help to maintain the differences in goals in the worlds of the advisors and electronic cigarette users. Electronic

cigarettes act like anchors 'which help moor participants within different social worlds' (Williams et al., 2008: 16).

However, both worlds were able to communicate with each other based on the common understanding of electronic cigarettes and their multifaceted roles. So, the advisors attempted to embed electronic cigarettes within their public health strategies and quitting regimes. Although they disapproved of the electronic cigarettes' resemblance to conventional cigarettes, they acknowledged the electronic cigarettes' effectiveness and usefulness for some cohorts and most of them welcomed electronic cigarettes to be another tool in their '*armoury*'. Similarly, for electronic cigarette users, there was no agreement on the effectiveness, usefulness and representations of electronic cigarettes. They were used as a treatment, a substitute, a crutch and a hobby. Users, who used the Stop Smoking Service, were able to combine their individual preference for electronic cigarettes with the work of the advisors. Those who used electronic cigarettes outside the service viewed the benefits of electronic cigarettes as a stop smoking tool and some followed the 'weaning' regime to eliminate nicotine. As boundary objects, electronic cigarettes' structure 'is common enough to more than one world to make them recognizable, a means of translation' (Star and Griesemer, 1989: 393).

Electronic cigarettes were transformed from an anchor of difference into a bridge of similarity, allowing the negotiations and cooperation between different and, yet, similar, social worlds. Hence, electronic cigarettes, I argue, became a translational boundary object (Star and Griesemer, 1989: 392). This meant that electronic cigarettes enabled a shared understanding between the stop smoking advisors, who want to use electronic cigarettes as a medicine, and electronic cigarette users, who have a multifaceted use for electronic cigarettes. However, the resulted coherence does not mean creating consensus; rather, 'representations, or inscriptions, contain at every stage the traces of multiple viewpoints, translations and incomplete battles' (Star and Griesemer, 1989: 413). The following quote summarises some of the ways in which electronic cigarettes function as translational boundary objects, as they enable similar practices, yet different goals, and they shape the social practices in the interrelated worlds of the advisors and electronic cigarette users.

"I think it's 50 50, I think they [electronic cigarettes] can be used in either way because... I experienced it myself, I started with nicotine to smoke, weaned myself off nicotine till it's

nothing and now I just use this, I use it as a hobby. I think if you want to quit and I have known somebody who did that actually you could wean yourself off nicotine and then get rid of it and if you wanted to continue... the habit you can get an e-cigarette and continue, so you can use them in both ways.” (91, user)

Next, I discuss Theme 3, where I argue that the goals, reasons and management of using electronic cigarettes represent a manifestation of increased individualisation in society.

5.4. Theme 3: The Focus on Individualisation

Here, I show how, throughout the discussion of electronic cigarettes discourse, both data sources focused on individual responsibility, empowerment and willpower. Here, I demonstrate how the theme of individualisation fits with the biomedicalization process of ‘the focus on health itself and elaboration of risk and surveillance biomedicines’ (Clarke et al., 2003: 161).

5.4.1. Individual responsibility

The data showed a sense of individual responsibility for improving own health. This personal accountability was fostered by the stop smoking advisors’ approach when dealing with clients at the service, and by society overall. Personal choice was emphasised and empowerment was considered fundamental to achieve successful outcomes. There was a reliance on ‘neo-liberal consumer discourse that promotes being "proactive" and "taking charge" of one's health’ (Clarke et al., 2003: 181). All the advisors confirmed that they only provided advice to their clients, but decisions and choices were the responsibility of smokers/clients. The following advisor summarised the process of dealing with clients:

“If they asked me about the e-cigarettes or if they were already smoking them, I just give them guidance and information about that, but I wouldn’t as I am not allowed to recommend to someone... if they started and come to the service already using one... if they wish to proceed with using the e-cigarette and if they want to add any other products so I just give them advice and guidance and do what I can, but not to tell them what to do.” (S3, advisor).

The following extract is another example:

"It is an individual choice. It's my role to talk through what those choices are, what any of the risks might be... so it has to be their individual choice." (H5, advisor)

The following example shows how both users and advisors accepted the perception of an individual's personal responsibility and control over their own health:

"Yes he [the advisor] accepted it [electronic cigarette] but didn't recommend it. He is gone now, there is a new lady there and she is more accepting of the electronic cigarette and said that the service doesn't have to take the responsibility for it, so if it's found that there is something wrong, health wise or something, eventually it's my own fault. I do understand that." (5E, user)

In biomedicalization, there is an emphasis on the responsibility of individuals to be healthy and to take the necessary steps to become healthy. Some users spoke about family members who advised them to switch to electronic cigarettes to improve their health. For example, the following electronic cigarette user spoke about her husband's advice:

"He's the most healthiest [sic] guy you'll ever meet. So for him, this is a very taboo subject as well. And he actually recommended, a good few years ago, 'You need to go and get an electric fag'. And that, I guess, is what prompted me to do it as well." (10J, user)

As Clarke et al. (2003: 162) explained, an individual's responsibility includes 'improve access to knowledge, self-surveillance, prevention, risk assessment, the treatment of risk, and the consumption of appropriate self-help /biomedical goods and services'. The following extract is an example:

"Nicotine is still an addictive substance, it is not the actual chemical itself as far as I know from the Internet. At least from my research, nicotine is not bad for you, but is still a stimulant and it is still addictive, but I can get rid of that completely then I am not tied down to anything and it means that if I leave my e-cigarette at home for two days I won't mind... I am not going to get a craving for it." (9I, user)

The emphasis on lifestyle choices was considered by Lupton (1997a: 107) to be a move towards medicalization and 'a growing penetration of the clinical gaze into everyday lives'. In the next chapter, I will discuss how the rationale to use electronic cigarettes was based on self-motivated personal judgements and reflexivity with regards to the potential risk of electronic cigarettes.

5.4.2. Empowerment

The advisors focused on empowering individuals to properly manage their individual health and make healthy choices. This fits with the dominant concepts of “health maintenance,” “health promotion,” and “healthy living” (Clarke et al., 2003: 172). Indeed, some advisors believed that the process of quitting smoking is part of a whole lifestyle transformation and empowerment. Particular norms of behaviour were constructed and individuals were then encouraged and empowered to adopt such norms voluntarily, through self-regulation (Petersen, 1997; Leventhal, Brissette and Leventhal, 2003). The following are some examples:

“When I deal with my patients I emphasise, we are talking about this smoking addiction, but it is exactly the same like any kind of addiction, it could be a gambling addiction, it could be any sort of behaviour change. So this is the way how I help them to distract themselves, so this isn’t about smoking, this is about whole ‘let’s get your goals and get yourself back’. So I try not to stress too much about the nicotine and the brain and it’s just smoking, it’s a change of lifestyle, it’s a self-efficacy self-esteem boost and it’s a whole well-being approach for me...” (H4, advisor)

“At the end of the day you want them to stop smoking for the health and you want to reduce the harm caused, the whole point is you want them to have a better lifestyle and not being controlled and make sure the cigarette is not in control of them and hopefully their health benefits and will improve.” (H1, advisor)

In this study, the acquisition of control over one self’s life was valued. There was an increased desire to take responsibility, to be in control and make personal choices for improvement. Individuals acted as active citizens who were in control of their own self (Nettleton, 2002: 215). As the following user said:

“I always think if you’ve made a conscious decision and you can’t, you’re not ready to give up nicotine, if you switch to a vape, you’re at least improving your health.” (14N, user)

The ability to overcome the habit of smoking contributed to the rise of self-esteem and self-confidence, as one electronic cigarette user explained how switching to electronic cigarettes made her *“feel more in control”* (5E, user). Another user stated that quitting smoking using

electronic cigarettes *“liberates me to make further choices about my lifestyle”* (14N, user). The advisors also saw how the ability to customise electronic cigarettes empowers smokers:

“I think... they feel they are in control because, instead of buying products and vapes, they can adjust their nicotine levels and they can feel like they’re more in control of the nicotine they are taking on board.” (S3, advisor)

Hence, electronic cigarettes can be viewed as ‘technologies of the self’ (Foucault, 1988a; Rose 1996 in Clarke et al., 2003: 165). Using electronic cigarettes can create new subjectivities, identities, and new social forms constructed around and through these emerged identities (Rabinow, 1992 in Clarke et al., 2003: 165). The next advisor explained how their approach of empowering individuals emphasises practising control over other habits:

“Our team is getting a lot of health psychology focus so it is to do with behaviour, they are moving away from the medicine approach; the medical approach, we are moving away from all that to say, look it’s to do with habit, it’s to do with routine, let’s break that up and use goal settings, for example. I think when you do that it’s far more effective and the individual benefits more because we feel they will have more control over their behaviour.” (H3, advisor)

For the above advisor, this approach was moving away from the medical model. However, according to Clarke et al. (2003: 172), in biomedicalization, ‘health becomes something to work toward, an ongoing project composed of public and private performances and an accomplishment in and of itself’. Hence, these practices are embedded in the bio/medical model.

5.4.3. Willpower

Several participants emphasised the role of willpower, or ability to discipline and regulate themselves, to quit smoking and even to quit electronic cigarettes, as the following examples revealed:

“It’s absolutely willpower. You do the same with alcohol, you do the same with any addiction, you just stop it and suffer the consequences.” (14N, user)

"The trouble is that then you get down to sort of wherever you get down to at the bottom where it's zero... and then you sort of ramp it up again and get stressed. No, I mean willpower is not my strong point really." (11K, user)

The following participants refused the idea that electronic cigarettes can treat addiction without willpower:

"If someone is serious about the change... it [electronic cigarette] can be effective, but only if they decide, mind wise. I don't think the tool itself is good enough to use it." (H4, advisor)

"If you have not got the willpower you are not going to stop regardless." (3C, user)

However, the next user revealed that, without aid, he would not be able to stop smoking. Nicotine addiction was viewed as a weakness and a sign of lack of control, as the user explained:

"Stopping smoking and not being addicted to nicotine are two different things. I would need the willpower to get off the nicotine. I have tried before and I think the longest I've done without it has been like three months, something like that, and then cracked." (11K, user)

Health, in biomedicalization, is seen as 'ongoing moral self-transformation' (Clarke et al., 2003: 172), as the following user explained his ongoing attempt to battle nicotine addiction:

"Willpower... was a huge factor... the first time I quit... the switch to electronic cigarettes, I didn't feel like that. I felt like I was kind of giving into my addiction again rather than... a thing to celebrate. So I don't think willpower was involved in the switch to electronic cigarettes." (12L, user)

A similar finding was noted in a study that looked into fathers' stories of reducing and quitting smoking (Bottorff et al., 2009). In their study, the notion of quitting with the help of nicotine replacement therapies, or other cessation aids, was framed in ways suggesting weakness and lacking the control to cope with the physical and psychological burdens of quitting. Willpower, as shown in the Chapter 1, was identified in several studies as an important factor to successfully quit smoking (Wiltshire et al., 2003; Pipe, Sorensen and Reid, 2008; Ingall and Cropley, 2010; Rooke, Cunningham-Burley and Amos, 2015).

To conclude Theme 3, the above extracts show how electronic cigarettes fit within the culture of contemporary public health systems. In general, the advisors directed clients towards medications and behavioural changes, and attempted to bring electronic cigarettes into the world of medicinal nicotine to be given a central role as an aid to stop smoking. Although some advisors attempted to move away from “*the medical approach*”, their *empowering* strategies, which aimed at ‘behavioural and lifestyle modifications’ (Clarke et al., 2003: 182), were embedded in the medical gaze. Individuals were required to govern themselves, observe and monitor their own behaviour by using disciplinary power (Foucault, 1988 a,b; Nettleton, 1996). They were subjected to a form of social control based on self-regulation, self-monitoring and avoiding ‘risk’, through adopting healthy lifestyles and keeping well (Nettleton, 1996).

The three discussed themes: the reasons for using electronic cigarettes; the ambiguity of electronic cigarettes’ status and efficacy; and the theme of individualisation, show how electronic cigarettes can be described as boundary objects and, at the same time, are a product of the biomedical era. My participants revealed several reasons for using electronic cigarettes. They had different goals and use patterns and they expressed varied conceptions about the efficacy, status and risks (see next chapter) of electronic cigarettes. Users who perceived electronic cigarettes as therapeutic products, used them differently from those who perceived them as a substitute for smoking. For example, the former users had a plan to ‘wean’ themselves off electronic cigarettes. The latter users, however, expressed enjoying their use as a new habit. The perceived benefits that the users had gained as a result of switching from smoking traditional cigarettes to using electronic cigarettes, and the different elements that attracted them to use electronic cigarettes (as discussed in theme 1) have led users to downplay the uncertainty about electronic cigarettes, as the next chapter will reveal. The advisors, however, while acknowledging the benefits and different reasons for using electronic cigarettes, were more cautious about these products. It is due to this ambiguity, disagreement and different social meanings allocated to electronic cigarettes, that the boundary objects have formed. It was also apparent how the biomedical knowledge of nicotine, smoking and addiction had an effect on the different use patterns and conceptions of electronic cigarettes. Individual responsibility for one’s own health and of others, was also evidenced within my data. I demonstrated how the ultimate goal of using

electronic cigarettes for all the advisors and the majority of users was to maintain health and reduce the harm to users and the people around them. I will now elaborate on the link of both biomedicalization and boundary objects theories to the findings of this chapter.

5.5. Discussion

In this section, I link both biomedicalization and boundary objects theories to the findings of this chapter.

Besides the biomedical process of focusing on health, I draw on the process of 'Transformations of identities, through the creation of new identities by using new technology' (Clarke et al., 2003: 161). The interview data suggest that most electronic cigarette users used electronic cigarettes to reduce or stop smoking. Some users tried to fit electronic cigarettes within their past smoking rituals, such as using electronic cigarettes outdoors and in social occasions with their friends who smoke cigarettes. However, the transition to using electronic cigarettes, instead of traditional cigarettes, created a new social world, new categories of health-related identities and re-defined electronic cigarette users' old ones (Clarke et al., 2003: 182). Using electronic cigarettes as a substitute created a unique representation for electronic cigarettes and, most importantly, a new meaning for nicotine. Electronic cigarettes not only were represented as a temporary substitute, but as a new habit with its own rituals and culture. Electronic cigarette users spoke about their own experience of using electronic cigarettes; they described the different flavours they used, the strength of nicotine and the varied designs and techniques of using electronic cigarettes. Some mentioned developing a new hobby and new ways of communicating with other vapers, such as online forums. Moreover, within the third theme (individualisation), I showed how new subjectivities emerged as a result of using electronic cigarettes, such as new liberated and self-disciplined individuals. This shows how 'biomedicalization imposes new mandates and performances that become incorporated into one's sense of self' (Clarke et al., 2003: 182).

The construction of different meanings for electronic cigarettes by different actors is mobilising processes of biomedicalization of smoking, nicotine addiction and electronic cigarettes. Clarke et al. (2003: 173) suggested that, due to a shifting responsibility to 'include collaboration with or reliance upon the individual patient/user/consumer', health

has become 'paradoxically both more biomedicalized... and seemingly less medicalized'. It is due to the diverse meanings and perceptions of electronic cigarettes that the ambiguity regarding electronic cigarettes' status and efficacy existed. Electronic cigarettes were brought into the field of the medical gaze. For the advisors, the ultimate goal was always to help users stop smoking, eliminate nicotine and to stop using electronic cigarettes. Electronic cigarettes were transported into the world of public health to become part of the organisational processes of tobacco control. So, electronic cigarettes were moulded to fit into their regime; hence, implying the electronic cigarettes' value as a cure or remedy. The advisors brought electronic cigarettes into the world of 'clean', safe, regulated and good nicotine, and alienated them from the 'dirty', unsafe and 'deviant' smoking habit. Shifting electronic cigarettes to the harm reduction field and creating opportunities to deal with electronic cigarette users/'consumers' signifies a more medicalised approach to nicotine addiction.

However, the recreational use of electronic cigarettes outside the medical control signifies a less medicalised gaze for nicotine addiction. Electronic cigarettes, as a new biomedical product, have created new social forms and social realities with blurring boundaries between the world of 'good' nicotine and 'bad' nicotine (Clarke et al., 2003). Electronic cigarettes as 'technologies of the self' (Foucault, 1988a) were used, perceived and understood differently by different groups and, therefore, functioned as boundary objects. Although, on the one hand, these blurring boundaries and diverse meanings might undermine the dominance of biomedicalization, on the other hand, they represent a strong indication of the ability of boundary objects to maintain identity in spite of the ambiguity.

As translational boundary objects, electronic cigarettes enabled two social phenomena to merge, namely the recreational and therapeutic nicotine. Electronic cigarettes have reconciled the meanings of methods and concepts across the multiple social worlds of electronic cigarette users and the advisors (Star and Griesemer, 1989: 388). Electronic cigarettes have the ability to structure behaviour in individuals and groups (Bauer and Gaskell, 2002: 383). I demonstrated different ways of dealing with and managing electronic cigarette use by different participants. For example, some users followed a 'weaning' regime similar to the use of nicotine replacement therapies. Some advisors acknowledged the usefulness of electronic cigarettes for some cohorts as a substitute for

smoking. The data in this chapter show how electronic cigarettes have created new forms of using nicotine, new identities and new links among the social worlds of 'good' and 'bad' nicotine. Electronic cigarettes as boundary objects enabled the parallel existence and coexistence of these new subjectivities and links; hence, we can see how processes of biomedicalization are influenced by the formation of electronic cigarettes as boundary objects.

5.6. Chapter Summary

This chapter explored the perceptions of electronic cigarettes through focusing on electronic cigarette users and stop smoking advisors' perceptions. I focused on discussing three major themes, the reasons for using electronic cigarettes; the ambiguity of electronic cigarettes' status and efficacy; and the theme of individualisation. The data from both groups showed no consensus with regards to the perceptions of electronic cigarettes. I argued that electronic cigarettes function as boundary and translational boundary objects. I established a link to biomedicalization theory, where the intensifying foci on health itself and the move towards individualisation were evidenced within the data. I also used my data to show how both boundary objects and biomedicalization theories are interlinked. The next chapter will explore the perceived risks associated with electronic cigarettes among both groups.

Chapter 6: The Ambiguity of Electronic Cigarettes' Risk

6.1. Introduction

This chapter addresses mainly the question: What are the perceived risks associated with electronic cigarettes, as discussed by electronic cigarette users and stop smoking advisors? To some extent also, it addresses the question: What factors have shaped these perceptions of electronic cigarettes? Using interview data, the chapter provides an overall perspective on the risk perceptions and meanings of electronic cigarettes as described by both the advisors and electronic cigarette users, and explores some of the sociocultural factors that might have mediated such perceptions. This chapter links risk perceptions of electronic cigarettes and risk assessment with the wider sociology of risk. This will help explain the role of risk perceptions of electronic cigarettes among other social meanings, and the stance that different participants take on electronic cigarettes. First, I discuss the different identified risks by both groups. Following that, I reflect on the electronic cigarette users' risk assessment strategies. I conclude by discussing the link to the theoretical framework (boundary objects theory and biomedicalization).

6.2. The Emerging Themes

The ambiguity of electronic cigarettes was a prominent theme. There was uncertainty about the risk that they may pose. Two types of risk emerged from the transcribed interviews: physical and social risk. Within the physical risk, participants identified health and safety risk, and nicotine use risk. Social risks can be grouped into four categories, as follows. First, developing an addiction to electronic cigarettes and maintaining nicotine addiction. Second, the increased uptake of electronic cigarettes, gateway use and renormalisation. Third, the risk of stigma. Fourth, risk of the involvement of tobacco companies. Table 2 summarises the identified risks.

The Ambiguity of Electronic Cigarettes' Risk	Theme 1: The Ambiguity of Physical Risk	Health & Safety
		Nicotine Use
	Theme 2: The Ambiguity of Social Risk	Developing Addiction to Electronic Cigarettes and Maintaining Nicotine Addiction
		Increased Uptake of Electronic Cigarettes, Gateway Use, and Renormalisation
		Stigma
		Involvement of Tobacco Companies

Table 2: The identified risks by interviewees

6.2.1. Theme 1: The Ambiguity of Electronic Cigarettes' Physical Risk

The theme is divided into two subthemes: health and safety risk and nicotine use risk.

6.2.1.1. Health and Safety Risk

Participants held different opinions about the safety of electronic cigarettes, as the following section shows.

Doubts about Electronic Cigarettes' Safety

Both groups expressed doubts with regards to the safety and health implication of using electronic cigarettes. There was uncertainty with regards to the content of electronic cigarettes and how this may affect the users and others around them. For instance, the following users stated: *"We don't know yet what vaping does"* (12L, user), *"we don't know whether they [electronic cigarettes] are 100% safe at all"* (9I, user), and *"it's [electronic cigarette] still giving out a certain vapour which isn't generally known what's in it"* (7G, user). Uncertainty was also expressed by all stop smoking advisors. One advisor said:

"I wish I could tell them with absolute surety what the safety is and I can't. I wish I can tell them with absolute surety how much nicotine they are getting from the product and I can't. So I think there are gaps there that I would like to fill." (H6)

The advisors expressed more negative assumptions with regards to electronic cigarettes' safety and health implication than electronic cigarette users. One advisor described some electronic cigarette designs as *"freaky"*, *"scary"* and *"dangerous"*. She said:

"They [electronic cigarette users] are really convinced that there is nothing wrong with it [electronic cigarette], it's all good, it's all safe. They only have vapour. I really think that there is a lack of information." (H4)

Another advisor stated:

"I still think that what we give out [nicotine replacement therapy], we know is safe, it's been tried and tested and I wouldn't, you know, I wouldn't consider giving an electronic cigarette to a member of my family knowing that they're not regulated in any way." (S5)

Interviewees, from both groups, expressed their concerns about health risks in the long term which may become a public health problem, as one advisor stated:

"We know that it is effective, but what are the health risks for people inhaling propylene glycol over periods of time? I don't know and that's the bit that worries me a little bit; are we just storing up for other public health issues in years to come?" (S2)

One user shared his concerns by stating:

"There's no long-term studies. That kind of worries me, not just a little bit, it does worry me. So it's kind of experimenting with the first generation of these for the first time, you don't really know what somebody's lungs look like in their fifties when they've been using them for a lifetime. So it's completely new territory and that kind of makes the risk a little bit less easy to grasp." (12L)

Another advisor's concern stemmed from the history of cigarettes and the worry of history repeating itself with electronic cigarettes:

"My slight concern is, of course, many decades back it was thought that cigarettes were health-enhancing; it was thought there were benefits from smoking, now I know there is a lot less. Obviously, there is no tobacco, there are none of the chemicals in electronic cigarettes, but I think my slight concern is that, a decade or so on, or two generations on, are we going to be looking at vapers and say, "oh, we now know that those vapers are not particularly health-enhancing", and having to backtrack and do something? I don't know, I am not sure." (H5)

Other studies showed electronic cigarette users' and advisors' concerns about the safety of electronic cigarettes and their influence on health (e.g. Etter, 2010; Muñoz et al., 2014; Beard et al., 2014; Hiscock et al., 2014; Rooke, Cunningham-Burley and Amos, 2015; Sherratt et al., 2015a, b). Similar to my findings, concerns from the long-term effect of using electronic cigarettes were particularly expressed in other studies (e.g. McQueen, Tower and Sumner 2011; Baweja et al., 2016). However, for some users in McQueen, Tower and Sumner's (2011) study, the immediate benefits and improving the quality of life were perceived to outweigh any potential long-term harms.

The Electronic Cigarette is Not Unsafe

Some electronic cigarette users, in this study, were not concerned about the safety or health issues related to electronic cigarette use. One user explained when asked if he has any worries:

"No, not at all, I know there is a little bit of concern, but compared to cigarettes, I wasn't worried about that at all because... I am a doctor myself, so there is no tar, there is no carbon monoxide. I don't know what is in the vapour, but I wasn't the least worried." (8H)

One user also answered: *"I haven't really thought about it, frankly I am enjoying it"* (13M, user). Another user, when she was asked about the safety of electronic cigarettes, replied: *"I don't know, I welcome reading more research on it"* (1A, user). Some users believed electronic cigarettes to be safe to use. One user said: *"I mean, I don't see how they would ban electronic cigarettes unless they found they were doing some sort of damage and I don't think there is any evidence to prove that"* (5E, user). Another user argued: *"I don't think it's particularly dangerous, anything in excess is going to be bad for you, but if you use it properly it's as simple as that, it's an aid to give up smoking"* (7G, user). Other users also stated: *"It's not unhealthy for me or for the people around me"* (2B, user). *"I would say it should be allowed, it doesn't do any harm... the electronic cigarette does nothing actually"* (4D, user).

Moreover, users talked about the health benefits of using electronic cigarettes, like improving their lung function. For example, 1A said: *"My lung capacity feels better."* 3C said: *"I noticed after the first month with electronic cigarettes that I am hardly out of breath anymore, I don't stink of cigarettes anymore, I had lots of energy, my appetite was back,*

massive difference.” Still, one user mentioned the side effect of throat irritation. Participants in other studies reported perceiving electronic cigarettes to be safe (e.g. Goniewicz, Lingas and Hajek, 2013). Also, an improvement in health was reported (e.g. Heavner et al., 2009; Etter, 2010; McQueen, Tower and Sumner, 2011; Dawkins et al., 2013). Side effects affecting the throat were reported as well (Etter, 2010; Dawkins et al., 2013; Hajek et al., 2014). Some participants, in this study, mentioned negative design issues which affected the safety of the product, such as leaking bottles and the safety of chargers. Participants in other studies also highlighted the manufacturing quality issues (e.g. Etter, 2010; McQueen, Tower and Sumner, 2011).

The Electronic Cigarette is Safer than Smoking

As seen in some earlier examples, the safety of electronic cigarettes was compared to traditional smoking. There was a consensus in both groups that electronic cigarettes were less harmful than smoking. It was, therefore, the relative risk that was pointed at rather than the absolute safety. One user said: *“I think there is nothing wrong with them, if you don’t give up smoking you’re done”* (6F). Another user stated:

“Obviously, this is less harmful to you and people around you. Obviously with the smoking you’ve got all the extra chemicals they put in there, which is harmful to you and to people around you.” (10J)

However, there was still some uncertainty: *“they are safer than cigarettes, but you know you can’t say that for certain”* (12L, user). Participants in other studies believed the risk of electronic cigarettes was less than the risk from smoking (e.g. Etter, 2010; McQueen, Tower and Sumner, 2011; Barbeau, Burda and Siegel, 2013; Pepper and Brewer, 2013; Peters et al., 2013; Sutfin et al., 2013; Goniewicz, Lingas and Hajek, 2013; Dockrell et al., 2013; Dawkins et al., 2013; Brown et al., 2014b; Tan and Bigman, 2014; Pepper et al., 2015; Sherratt et al., 2015.a, b; Rooke, Cunningham-Burley and Amos, 2015). However, in Sherratt et al.’s (2015b) study, a significant number of participants felt uncertain whether electronic cigarettes were safer than smoked tobacco. But, since their findings reported that current users were more likely to view electronic cigarettes as less harmful than former or never users, their results coincide with this study, as the samples here were all current electronic cigarette users. ASH

(2016b) also reported that some electronic cigarette users stopped using electronic cigarettes because of concerns that they were not safe enough.

Similarly, the advisors compared electronic cigarettes to normal cigarettes and considered the potential of electronic cigarettes as a harm reduction tool for some smokers. This is because they viewed them as *“a less toxic sort of way of stopping smoking”* (S3). One advisor stated: *“I see their place in harm reduction for those heavily addicted to smoking”* (H5). She explained:

“...it could be the electronic cigarette is the thing that helps them to stop, or at least the thing to taking nicotine at a relatively safe level without all the chemicals from tobacco and all the harm from carbon monoxide. You are at least eliminating two of those big sources of ill health and how it affects the health detrimentally.”

Some advisors envisaged the benefits of electronic cigarettes for smokers with health problems:

“For some people, yes, it’s a really good route and a very effective way for them to stop smoking and to transfer onto a less toxic sort of way of stopping smoking... these are people who have to stop for health reasons and, although it’s not regulated, we don’t know what it does to the body, but if they are suffering from emphysema and they are waiting for operations and all sorts of... you name it... and this is what comforts them and helps them, this is maybe better than having a cigarette.” (S3, advisor)

Similar views were reported by other health practitioners in both Beard et al.’s (2014) and Hiscock et al.’s (2014) studies.

6.2.1.2. Risk of Nicotine Use

In sections (1.2.2), I discussed nicotine characteristics and the debate about its safety. Participants from both groups emphasised the implications of using electronic cigarettes containing nicotine. In general, it was agreed that nicotine is an addictive substance and, therefore, several concerns were raised as a result. The first concern was that the substitution for traditional cigarettes may create a new addiction to electronic cigarettes. Second, a concern that electronic cigarettes could maintain nicotine addiction. Third, the gateway concern. These will be discussed next as part of the social risks. Only two users

specified their concern regarding the negative effect of using nicotine; one user described nicotine as a *“poison”* (3C, user), while another user thought that *“nicotine itself isn’t very good for you”* (11K, user). Similar concerns were expressed by some participants in Rooke, Cunningham-Burley and Amos’s study (2015).

To summarise, there was uncertainty about the potential health risks of electronic cigarettes. The advisors expressed more negative assumptions with regards to the electronic cigarette’s safety and health implications, yet both groups agreed on its relative safety when compared to traditional smoking. The users’ perceptions of safety ranged between perceiving electronic cigarettes to be safe, safer than smoking and not knowing if they are safe or not. The anxieties that were expressed by some participants resulted from the uncertainty of electronic cigarette use outcome and their potential risk. The health benefits were described by some users. Overall, uncertainty was evident in both groups, similar to findings from other studies (e.g. Etter, 2010; McQueen, Tower and Sumner; Sutfin et al., 2013; Pepper and Brewer 2013; Rooke, Cunningham-Burley and Amos, 2015; Sherratt et al., 2015a, b; ASH, 2016b). In spite of the uncertainty, electronic cigarette users in this study continued to use electronic cigarettes. Only one user decided to stop electronic cigarette use because he *“kept wanting to smoke again”* (8H). Next, I discuss the identified social risks.

6.2.2. Theme 2: The Ambiguity of Electronic Cigarettes’ Social Risks

This theme is divided into four subthemes. First, developing an addiction to electronic cigarettes and maintaining the addiction to nicotine. Second, increased uptake of electronic cigarettes, gateway use and renormalisation of smoking. Third, risk from stigma and, fourth, the involvement of tobacco companies.

6.2.2.1. Developing Addiction to Electronic Cigarettes and Maintaining Nicotine Addiction

I consider developing addiction to electronic cigarettes and maintaining addiction to nicotine a social risk because as I explained in chapter 1, among the main health organisations in the UK, including the Stop Smoking Services and stop smoking advisors, it is well accepted that nicotine does not cause harm. Hence, I did not include this risk in the physical risk section. Further, I have highlighted that nicotine replacement therapies have been used for many years to help smokers stop smoking, but their long term use and the

risk of becoming addicted to these products have not generated fierce debate similar to the debate that electronic cigarettes have ignited. In chapter 1, I have also highlighted the efforts of mainstream tobacco control movements to eradicate the visibility of any smoking like behaviour (Bell and Keane, 2012), and the efforts of some tobacco control programmes to hinder the progression of practices such as harm reduction approaches to achieve the goal of eliminating all kinds of nicotine use (Elam and Gunnarsson, 2012). This has led me to conclude that these efforts to eliminate the use of nicotine are based on their stance of eliminating nicotine addiction as a social habit rather than a harmful practice. Indeed, my findings show how the worry about the similarity of the habit of electronic cigarette use to smoking has led most advisors to approve their ban in public places, regardless of the safety issue.

Some advisors showed a concern with regard to people who had decided to start using electronic cigarettes and who might then develop a nicotine addiction. One advisor said:

"I feel like there is a new toy in the market, 'let's try this, you know, because it's supposed to be healthy and not cause any health problems'. But it's a chemical that they don't need, it's not going to benefit them, so that's that. The danger may open up a door for an addiction they did not have to begin with. Yeah, it's a double-edge sword." (H1)

The following user also explained how experimenting with electronic cigarettes can develop an addiction:

"Unfortunately habits and addiction, it kind of, for me it creeps in. So if ever my boys or anyone in my family said, 'Well, I'm going to...' even if they're not a smoker, 'I'm going to try the vape.' I'd say, 'No don't do it,' because again it's something that you might really enjoy doing and again it's – you've got to put money into it, and in reality, if you've lived without it, you don't need it really." (10J)

Other advisors highlighted their concerns about developing addiction to electronic cigarettes. Some mentioned that some electronic cigarette users approached their Stop Smoking Service asking for help to stop using electronic cigarettes:

"It started to happen not that often, but I know three instances in the last few weeks when people were presented to us, stating that they already quit cigarettes but wanted to come off electronic cigarettes, and that's brand new for us." (S2)

Both Beard et al.'s (2014) and Hiscock et al.'s (2014) studies pointed at similar concerns by the stop smoking advisors and managers in Stop Smoking Services (see 1.4.3). One advisor in this study, however, was not worried about developing an addiction to electronic cigarettes, based on comparison with traditional cigarettes and cases of people developing addiction to other licensed nicotine-containing products:

"I wouldn't be worried because it's still harm reduction, but we've had people become dependent on the licensed products, and we've suggested a patch programme that can help them come off the oral stuff. The oral stuff is much more addictive than the patches. So I don't have any big worries because I know that they're safer with electronic cigarettes than normal cigarette." (S4)

Similarly, some users acknowledged the addiction they had developed to electronic cigarettes, as the following user put it:

"It's going to be as big a struggle as giving up normal cigarettes... But then, I suppose.... they help you stop smoking, I can see – I think for me they mimic smoking almost perfectly, so the addiction is almost as bad to these things as it is to cigarette." (12L)

Some users also acknowledged that using electronic cigarettes can maintain nicotine addiction, as one user asserted:

"I mean there are no health warnings on it [electronic cigarette] because no one has discovered any health dis-benefits apart from the fact that it will keep you addicted to nicotine. And I think most people who smoke electronic cigarettes, I think, know that nicotine is highly addictive." (14N)

In their study, Sherratt et al. (2015a) found that both ever and never users acknowledged that electronic cigarettes were associated with the maintenance of nicotine dependence. Their participants disapproved the long-term nicotine dependence, independent of tobacco smoking. They also disapproved of the long-term use of electronic cigarettes. Dawkins et al. (2013) raised the question that electronic cigarettes themselves could possibly be addictive, although their findings suggested a lower dependency on electronic cigarettes compared to tobacco smoking. ASH (2016b) reported that some electronic cigarette users stopped using it because of a concern of more frequent use of electronic cigarettes. Other literature discussed the uncertainty as to whether vaping

reduces or increases nicotine addiction. In their study, McQueen, Tower and Sumner (2011) found that many vapers reported using lower nicotine concentrations over time. A prospective population study concluded that smokers who have used electronic cigarettes may be at increased risk of not being able to quit smoking (Al-Delaimy et al., 2015: 1218). The authors asked for further studies to address their findings, but stated that ‘It may be that e-cigarette use is increasing the nicotine dose of smokers and their level of dependence, making them less capable of quitting.’ Rooks et al.’s study (2015) found that the concern of creating another addiction was highlighted by a group of recent ex-smokers, who stated that the concern of creating a new addiction can be attributed to increased intake of nicotine, when using electronic cigarettes, due to the unique design and consumption technique of electronic cigarettes. This is a point of view that was highlighted by some electronic cigarette users in this study. The following two examples were also used in section 5.3.2.2 when the efficacy of electronic cigarettes to deliver nicotine was discussed:

“I don’t find it gives me the total satisfaction that a normal cigarette gave me. Thus, I ‘suck’ on it a lot more than I probably should.” (2B)

“I take far more nicotine now, far more. The thing about the electronic cigarette is... it doesn’t stop... you can smoke for three hours continuously or something, I don’t know exactly how long the battery lasts. But it lasts for hours.” (11K)

To the contrary, other users highlighted the ability to reduce nicotine levels in electronic cigarettes. Indeed, some users said they were using zero nicotine-strength electronic cigarettes, while others verbalised their plan to reduce nicotine intake. The concern of an increased consumption of nicotine as a result of using electronic cigarettes was also highlighted by some advisors, as the following extract shows:

“The other problem I have is that I think a lot of these people are having probably more nicotine because they’ve got this electronic cigarette in their mouth all the time.” (S6)

6.2.2.2. The Uptake of Electronic Cigarettes, Gateway Use and Renormalisation

In the literature review, I showed that concerns from these risks were raised in spite of the lack of strong empirical evidence (see 2.5.2.2). The data from this thesis showed a range of divergent opinions as I clarify next.

The Uptake and Gateway Risk

Electronic cigarette users in this study were either dual users (both smokers and electronic cigarette users) or ex-smokers but currently using electronic cigarettes. Although some saw the possibility of the young taking up the habit of using electronic cigarettes, others did not think that electronic cigarettes would attract non-smokers, as the following user said: *“I can’t imagine anybody using it if you didn’t use to smoke... maybe some people think it’s cool. I find that a bit difficult to imagine, to be honest”* (11K, user). Still, it was viewed as a better choice than taking up traditional smoking: *“I think it’s kind of sad but it can’t be as harmful as smoking, starting to smoke”* (5E, user).

Electronic cigarette users were divided in their opinion as to whether electronic cigarettes can be a gateway to smoking. Some agreed with such a possibility, as the following user explained:

“I don’t know. But I don’t see why that can’t happen. If you build up a nicotine addiction through vaping, and one day you walk past an airport and there’s no other way of getting your fix than buying a packet of cigarettes, because no one sells – I can well imagine people will try that.” (12L)

Another user provided a similar opinion: *“I think that is quite a good possibility because they are getting used to the habit of putting something towards their mouth and it’s got nicotine in it”* (7G). Others, however, did not agree with the gateway concern, as the following example showed: *“I don’t really see that, to be honest... The transition from that to a cigarette, I don’t buy that. It’s too different”* (11K, user). Another user, who disagreed with the gateway idea, said:

“I don’t think that people use it as a gateway to cigarettes, but I am obviously worried about it and I don’t want people to do it, but I do think that there are going to be some people who start smoking by using electronic cigarettes and get slightly addicted to it. But I don’t think anyone will use it to go to cigarettes because cigarettes smell and taste disgusting in comparison.” (9I)

The advisors were also divided in their opinions. Some were concerned about the gateway concept, but others were not. The following advisor showed uncertainty:

"I don't think there is any evidence at the moment that children are starting to use an electronic cigarette, that it is used as a gateway drug. But I don't think we have got enough evidence, longitudinal evidence." (H6)

Some advisors pointed at the role of advertisement, marketing and flavours in attracting young people in particular. One advisor described the popularity of using electronic cigarettes among the young; yet, he did not relate that to smoking:

"The evidence to me by talking to members of the family that they do see that the number using them is a fact, but I don't think it will lead them to smoke." (S2)

Another advisor (S5) also described how electronic cigarettes had become popular among the young people: *"My daughter is in the sixth form, she says that in break time now, the students are all getting their electronic cigarettes out and vaping."* Another advisor emphasised the increased uptake of vaping, but did not agree with the gateway concept:

"I think if people start smoking or vaping I'm not necessarily sure it will lead to conventional smoking, probably more the other way round I guess... but I do think we'll create a generation of people who have maybe never smoked tobacco but are vapours." (S3)

The same advisor predicted that, once electronic cigarettes become regulated, they are going to become the *"more cultural norm"*.

Renormalisation Risk and Denormalisation of Electronic Cigarette Use Policies

The concern that public health efforts to denormalise smoking may be undermined by normalising electronic cigarette use in society was highlighted by the advisors. There were concerns of the resemblance between electronic cigarettes and traditional cigarettes and the difficulty in differentiating between vaping and smoking, especially by children. Some advisors did not approve of using electronic cigarettes in public places and called for extending Smokefree laws to include electronic cigarettes, even in the absence of evidence of harm. In the words of the following advisor answering the question if she accepts using electronic cigarettes in public places:

"If it looks like a cigarette, no, and it's not necessarily because there are any effects of harm. But I think from a distance it will look like someone is smoking and then it will

become very difficult to regulate. Is that person smoking or is that person using the electronic cigarette?" (H6)

The same advisor highlighted the undermining of smoking denormalisation efforts, as follows:

"I do have reservations about it in that it's looking like a cigarette and undoing the work of tobacco control we've done in terms of de-normalising it, and I do wonder about people using it in front of children as well and what the long-term effects of that are." (H6)

Other advisors agreed with this argument, as the following extract reveals:

"About how it looks. I think generally there has been a huge amount of work to achieve the stop smoking ban in public places that is: any transport, any restaurant, any sort of public place, and I think to allow electronic cigarettes in those places will be a retrograde step." (H5)

The similarity of electronic cigarettes to traditional cigarettes in the image and the habit was unwelcomed by most advisors. It was viewed as an obstacle to break the habit of smoking and to disassociate between both products. For example, the following advisor viewed the resemblance between electronic cigarettes and cigarettes to be a hindrance to successful quitting, rather than an aspect of electronic cigarettes' efficacy:

"I am more worried about the habit and the image, yes, but... it will be regulated anyway so then they will have to make amendments.my concern is the quick hit and the look and what people associate, you know, they are fooling themselves that they are making a change, but psychologically they are not ready to make a change because, what I say, why would you do exactly the same, just have the real one then." (H4)

The following advisor also supported a ban on electronic cigarette use in public places to avoid the uptake of electronic cigarettes:

"Because with the cigarette you can say it is harmful; it's dangerous; it is not good for you. But as they get older they question the nicotine products that are safe so the electronic cigarette won't be an issue in using. I'd rather it be limited in where they can use it, so they cannot use it on buses or the trains, in schools, and the same with smoking use, the electronic cigarette, outside the school or the playground." (H1)

Nevertheless, one advisor (S4) recognised that replicating Smokfree regulations to vaping is not a straightforward answer as people's rights need to be considered, both for vapers and the people around them. This agrees with Voigt (2015), who calls to explore restricting of electronic cigarette use in the lens of the ethical complexities of attempting to manipulate social norms to change an individual's behaviour. Both Beard et al.'s (2014) and Hiscock et al.'s (2014) studies showed that health professionals in Stop Smoking Services were concerned about the gateway use, nicotine maintenance and renormalisation of smoking.

However, users in this study stated that, generally, they did not use electronic cigarettes around other people, unless they asked for permission. One user said:

"I personally don't use them anywhere I don't normally smoke at all. So I wouldn't use it in a building unless, of course, it is a friend's house and I know that they are ok with it. If I am sitting down at a bus stop or something, I will ask the people around me if they are all right with that. I never use it around kids." (9I)

Users, generally, acknowledged that the vape might irritate others, even if there was no harm. Most of them also stated that they vape outside public buildings, especially restaurants. The following extracts are examples:

"It's the same principle. I just think its politeness, so even if the second-hand vape is safe." (3C)

"My view of the electronic cigarettes is it's, personally anyway, rude to smoke them any place where you wouldn't be allowed to smoke." (11K)

"I still feel that I am smoking and if I am smoking I go outside, it's the price I pay for it. I don't expect other people to sit around and inhale my vapour, the same way I expect them to sit around and inhale my smoke. I would go outside if I want to vape." (15O)

Nevertheless, one user introduced a contrary argument, defending electronic cigarette use in public places:

"If I am smoking my electronic cigarette in a place and someone comes up and said I find that offensive, the problem is with them not with me, because I am not smoking a cigarette which is illegal. I am smoking an electronic cigarette which is legal and... I am only omitting vapour [that is] not harmful." (13M)

None of the users, in this study, agreed to use electronic cigarettes in front of children, either for health and safety concerns or to avoid initiating a new unwanted habit, as the following user clarified: *"It doesn't seem like a very good example to set. And I'm not entirely certain that the steam is good for them"* (11K). Peters et al.'s (2013) results showed that users used electronic cigarettes everywhere, including school and home. Another study found that many electronic cigarette users reported having used their electronic cigarettes in a location they would not normally have smoked tobacco, like pubs/bars, public transport, work, shops, cars and in hospitals (Sherratt, 2015b). Moreover, other studies identified concerns about banning electronic cigarettes (Etter, 2010; Etter and Bullen, 2011; McQueen, Tower and Sumner, 2011). Pepper and Brewer (2013), in their systematic review, could not find any argument by users that electronic cigarettes should be exempted from Smokefree indoor regulations. Here, one user agreed with the ban on electronic cigarettes:

"You know if someone is using electronic cigarettes and there is a non-smoker in the building they are not going to like that either because of the different flavours. I think it's right the fact that some places ban the electronic cigarette, it's still giving out a certain vapour which isn't generally known what's in." (7G)

The majority of users, however, did not approve of a ban on electronic cigarette use in public places. The rationale was that banning electronic cigarettes should be linked to inflicted harm, as the following user said:

"I mean, I don't see how they would ban electronic cigarettes unless they found they were doing some sort of damage and I don't think there is any evidence to prove that." (5E)

A similar argument was forwarded by another user:

"I think the justification for banning cigarettes... passive smoking was an issue. I think if there is no danger of passive smoking [vaping] which I believe is the case, I don't see why they should be banned from public places." (1A)

Other users believed that smoking and vaping should not be restricted, for example:

"My opinion and that's with my fellow people who smoke vapes, is we're quite angry about the idea that it's going to be banned and that legislation is going to be brought in, and we're really quite angry, because those of us who have managed to keep off tobacco know that we're still addicted, but we found this to be much more pleasant in order to deal

with our addiction. So if they start banning it, it's just going to drive it underground, I guess." (14N)

Again, the following user believed that: *"It shouldn't be banned in public places as I can guarantee it will drive people back to smoking."* (2B, user)

In summary, the social risks of the uptake of electronic cigarettes, gateway and renormalisation were still ambiguous. Participants were divided in their views on whether there was a cause for concern. In their discussion of an electronic cigarette ban in public places, the advisors were worried about the resemblance of electronic cigarettes to cigarettes and favoured a ban on their use in public places. On the other hand, electronic cigarette users raised issues of their right to use electronic cigarettes, if harmless to others, without being discriminated or stigmatised. However, denormalisation of tobacco use policies, it was argued, resulted in the stigmatisation of smokers (Bayer, 2008; Bell et al., 2010). Accordingly, denormalisation of electronic cigarette use policies may result in the stigmatisation of vapers. The risk of stigma is discussed next.

6.2.2.3. The Risk of Stigma

Some electronic cigarette users in this study expressed their happiness and satisfaction for switching from cigarettes to electronic cigarettes. For example, the following users said:

"I admire the vapers because I think that they are very smart." (14N)

"I mean, at the moment I am smoking but next month I will probably be using vapour [electronic cigarette] and I will be a lot happier when I am using the vapour because I don't like smoking, it's just a very difficult habit to quit." (7G)

The advisors also recognised that users *"mostly they feel positive about using electronic cigarettes"* (H7). The following advisor also mentioned the new identity that electronic cigarette users are developing:

"The vaping community is getting bigger, they do seem to want to have an identity. A couple of facts. From the people I have spoken to, quite a few are quite proud of themselves that they don't smoke, they are seen as doing something new and exciting and I think, again on a long term, I think their perception is they try to distance themselves."

Certainly, for people they have been on for a longer time, it's not about the smoking it's about lifestyle, you certainly see that.” (S2)

Both groups agreed that electronic cigarette use is more acceptable than smoking. However, one of the social risks identified by electronic cigarette users was concern about stigma. Here, some users felt that electronic cigarette use was not socially acceptable. The advisors, in general, viewed electronic cigarettes to be socially acceptable, especially when compared to traditional smoking. The rationale for accepting or stigmatising electronic cigarette users was linked to the following reasons: vapour, knowledge, media, culture and group differences, safety, novelty, appearance and attitudes towards addiction behaviour.

Vapour

Vapour was acknowledged, by some users, to be unpleasant to people around electronic cigarette users. Vapour was also believed to be a reason for electronic cigarette use to either be accepted or stigmatised. For example, the following user believed that vapour irritated others and was a cause for an electronic cigarette ban in some places:

“I don't think it's acceptable. I don't think people are going to accept it, because I know a few people already who, you know, when you're puffing that out, even though it's not the smoke, someone is still having to breathe it in when they shouldn't have to. Or even just that smell of the, you know, the flavour or – and I know some places have banned it now.”
(10J)

Another user (9I) expected that the misuse of electronic cigarettes in a way that irritates non-users, such as blowing clouds in their faces, would end up in stigmatising electronic cigarettes. To the contrary, other users believed that electronic cigarettes have become widely acceptable because *“it's a lot more pleasant to people to smell the vapour than smoke”* (7G). Another user referred to the tobacco-free smell and the absence of second-hand smoke as the reasons for social acceptance (15O). Similarly, one advisor suggested that the vapour would not be a reason for people not to accept electronic cigarettes:

“Some people who are already strongly anti-smoking probably won't be happy seeing them. But I think the majority will probably accept them and maybe see it as people getting their fix of nicotine, there is some vapour but there is no smoke, so most will probably accept it.” (S4)

Lack of or Incorrect Information

Stigma was also related to lack of information or misunderstanding. Participants pointed out the role of communicating the right information about electronic cigarettes to avoid stigmatising electronic cigarettes. One user (9I) suggested that electronic cigarette users would not be subject to stigma, like smokers. He believed that when people understand what electronic cigarettes are, they will not look badly at the users. Another user, however, asserted that there was a stigma attached to electronic cigarettes; he believed that misunderstanding was the reason and highlighted the role of the media in stigmatising electronic cigarette use: *“the news is giving electronic cigarettes a massively bad press and they are not as bad as people are saying”* (3C). The above extract reflects the role of the media in creating ‘technological stigmas’, as discussed by Garrick (1998: 42). The lack of transparent communication of technical or scientific risk studies may lead to amplifying the risk of electronic cigarettes and, hence, amplifying the stigma (Kasperson et al., 1988; Gregory, Slovic and Flynn, 1996; Zwick, 2002a; Kasperson et al., 2003). A different view on the media was forwarded by one advisor, who suggested that promoting electronic cigarettes and the media attention have influenced their uptake and made electronic cigarettes socially acceptable (S1).

Stigmatising the Addiction

Stigmatising the addiction behaviour was believed, by one user (12L), to be a reason for stigmatising electronic cigarette use. The user explained that stigma, that is believed to be attached to smokers, has shifted to electronic cigarette users. The same user expressed how there had been a transition in people’s reactions to electronic cigarettes over time. So, while electronic cigarettes were accepted at the beginning as a smoking cessation aid, stigma emerged when they became a lifestyle choice. 12L explained:

“I think the stigma that smokers have has kind of carried on to the electronic cigarette users in the sense that the stigma was surrounding the addiction itself. People see you as weak because you give in to the addiction because you obviously don’t have willpower enough to stop, so it’s kind of the moral judgement...”

Other studies showed a small number of electronic cigarette users were concerned about the social acceptability of electronic cigarette use and felt embarrassed about using them

(Kralikova et al., 2012; Dawkins et al., 2013; ASH, 2016b). Although some of the electronic cigarette users in this study were concerned about social acceptability, only one user revealed that she wouldn't use electronic cigarettes in front of people:

5E: *That's just the personal thing with me, that's how I feel, I don't want to be associated with smoking I suppose... most people didn't even know I smoked cigarettes.*

Researcher: *So do you feel more comfortable using electronic cigarettes?*

5E: *In front of people, no.*

One user, when asked why she did not approach the Stop Smoking Service, she said:

"Probably shame. It's always been quite hidden behaviour and that's quite public and I am also very suspicious of the way the NHS use their data of people who smoke. I would be anxious that once my name becomes on the list of someone who previously smoked, I would be in future refused medical treatment." (1A)

Her answer reflects the notion of 'felt normative stigma' (Scambler, 2009: 446) as the subjective awareness of stigma by the user motivated her to avoid the service so as to avert 'enacted stigma' (Scambler, 2009: 445). This concurs with Stuber and Galea's (2009) study, where smokers concealed their smoking status from health providers. It also concurs with Stuber, Galea and Link's (2009) findings of smokers' avoiding cessation programmes in order to avoid stigma. It also conforms to the evidence Bell et al. (2010) provided of widespread discrimination against smokers in healthcare systems in the West. People's judgemental opinions about using electronic cigarettes were reported in Sherratt et al.'s study (2015a: 9). Moral judgement and stigma were described by Lupton (2006: 14) as a manifestation of increased individualisation and personal responsibility to conform to the social lifestyle norms and behaviours. The social norms that disapprove of smoking, especially the disapproval of family and friends, was believed to be a factor that contributed to forming smoker-related stigma (Stuber, Galea and Link, 2008). However, electronic cigarette users in this thesis did not report experiencing stigma personally. This could be because most users in this study used electronic cigarettes within an environment that accepted electronic cigarettes, as I show next.

Cultural and Group Differences

Users acknowledged that the acceptance of electronic cigarettes differs between different cultures or subgroups. While electronic cigarette users may experience stigma in one environment; they would be accepted in another surrounding. For example, the following user stated that vaping was not accepted by her parents, but was accepted by her friends:

"I think it depends on cultures and background as well because obviously in some cultures, a lot of things are accepted and, in some cultures, those things are just a no-go. So with my parents, I couldn't sit there in the lounge and have this with them. They would kick me out of the house... they'd say... "It's a habit, you don't need it..." That would be their take on it. So I think, I don't know, it all depends on your background and your culture and everything." (10J)

This, according to Lupton and Tulloch (2002: 331), shows 'reflexive awareness of how risk is understood and perceived in different ways for different people or social groups'. The overt discrimination and social unacceptability of vapers also conform to Scambler's perspective of 'enacted stigma' (2009: 445). Electronic cigarette users, who were surrounded by people and a community that accepted their habits, did not feel stigmatised. For one user (2B), his *"social life is better"* because he no longer needed to leave the room to have a *"fag"*. Another user did not feel stigmatised, even when he used to be a smoker, because he was surrounded by smokers (11K). One user explained how being part of a group of friends who accepted each other's habits, like smoking and drinking, meant that he was not excluded for any habit, including vaping (14N). The same user reflected on the stigma that he saw alcoholics and drug addicts face in his neighbourhood. He concluded that, although he was *"forced to live by non-smokers' rules, [because] pretty much the majority of the population doesn't smoke"*, he did not feel stigmatised. Another user spoke about people, who saw her vaping, being encouraging and curious about her using electronic cigarettes (1A). The same user reported the role of family endorsement: *"my children don't like the fact I use them at all but they are proud of me giving up smoking, my husband prefers it"*. Another user also said: *"My wife doesn't have a problem with it as long as it has a nice smell so she doesn't have to spend on air freshener because it does make the room smell nice."* (3C). Similarly, one user emphasised the encouragements he received from his family for using electronic cigarettes, and how he made his daughter happy for using electronic cigarettes rather than cigarettes. Although he still smoked traditional cigarettes, he preferred to use electronic

cigarettes around others. He described how people's perceptions of him had improved because they assumed he had stopped smoking (13M). The risk was, therefore, influenced by the sociocultural environment in which participants were embedded (Douglass, 1992; Lupton, 1999; Adam and Loon, 2000; Tulloch and Lupton 2003).

It was argued that electronic cigarette users exhibited solidarity to each other (Pepper and Brewer, 2013). The social benefits of vaping groups and online forums were highlighted in the literature (Etter, 2010; McQueen, Tower and Sumner, 2011; Barbeau, Burda and Siegel, 2013). Only one user (3C) in this study had a social activity on the Internet, as he was the founder of an online group in his county. The role of social connection was also acknowledged by the advisors in this study. One advisor noticed that: *"there seems to be a sub culture of e-ciggi [sic]"* (H4). Another advisor pointed at the electronic cigarette active vaping community and forums; he described how vapers try to distance themselves from their previous identity as smokers and establish a new vaping culture (S2). Another advisor pointed at the social element of using an electronic cigarette: *"for some, it is just like a social thing when they are with their friends and family, they want to feel a part of that group"* (H1). This could be explained as an attempt to disassociate themselves from the stigma that surrounded smokers, as well as to create new social norms to avoid social exclusion (Gibbs, 1965).

The Technological Innovation and Fear of Harm

The advisors highlighted the novelty and innovative elements of the electronic cigarette, which made it attractive, pretty and fashionable and, therefore, *"it doesn't seem to be frowned upon"* (S1). According to one advisor (H3), the electronic cigarette became a fashion item, especially for teenagers. The same advisor stated that electronic cigarette users reported using electronic cigarettes around people without feeling embarrassed. He also pointed at smokers who felt comfortable and positive while using electronic cigarettes, as an aid to stop smoking, compared to other licensed nicotine-containing products, which smokers did not like to use in public. Another advisor stated:

"I see it as a trend in human behaviour. Something which is new, and people like to try things, there is some curiosity. It's been heavily advertised and we live in an electronic age, so word gets around quite quickly." (S4)

The same advisor described electronic cigarettes as a fashion accessory. Similarly, one electronic cigarette user said:

"I like it when people ask me what I'm doing and I show them my machine and they get very interested in it because it doesn't look like a cigarette." (14N)

This conforms to Peppers et al.'s (2015: 323) argument that electronic cigarettes' status as an 'innovative product might reinforce their positive characteristics'.

However, similar to the stigmatisation of other technological hazards (Slovic, Gregory and Flynn, 1995), stigma was related to the safety and health implication that electronic cigarettes may inflict on others. One user asserted: *"cigarettes were proved to be harmful to people in closed places. Unless they can prove that electronic cigarettes are the same, they shouldn't be stigmatised"* (13M). Again, one user believed that stigma is less for electronic cigarette users than for smokers:

"I think they will be a little bit stigmatised, but I don't think they will be stigmatised as cigarettes because we know scientifically that there are real dangers from passive smoking and, at the moment, we don't know if there are real dangers from passive smoking; from people using electronic cigarettes." (8H)

Similarly, one advisor suggested that electronic cigarettes were accepted because of the absence of harm (H7). However, one advisor believed that electronic cigarettes were not socially acceptable by non-smokers due to the uncertainty about their content and safety. She pointed to fear from electronic cigarettes among non-smokers: *"We're all non-smokers and actually we're all very suspicious"*. She also mentioned how her daughter *"wants them banned because she doesn't know what she is breathing in"* (S5).

So, ambiguity and fear might contribute to the stigmatising of electronic cigarettes, as both reasons played a major part in stigmatising other biotechnological innovations and products (Gregory, Slovic and Flynn, 1996; Garrick, 1998), including fear of harming children by second-hand smoke, which contributed to the formation of a smoker-related stigma (Stuber, Galea and Link, 2008).

Resemblance of Electronic Cigarettes to Traditional Cigarettes

Stigma may also arise from the resemblance of electronic cigarettes to traditional cigarettes. Earlier in the chapter, I discussed how the advisors disapproved of this resemblance. Another example is this statement from an advisor:

“If they see something which looks like a ciggi [sic] how am I gonna help them to completely forget about smoking when it is exactly a replacement?” (H4)

However, the advisors saw the potential of the electronic cigarette, once regulated as a medicine, in helping certain people to quit smoking, as I discussed earlier. Users acknowledged the connection that the public establishes between smoking and electronic cigarette use (vaping). One user (13M) mentioned how he was approached in a public place by an individual who thought he was smoking. Another user said: *“there is a very negative [opinion], actually took from a non-smoking community who just see it as another potential of hazards like smoking”* (8H). Similarly, in Sherratt et al.’s (2015a: 11) study, the physiological and behavioural similarities to cigarettes were perceived negatively and were disapproved, particularly among never users, who expressed no intention to try electronic cigarettes. A similar disapproval was also identified in Rooke, Cunningham-Burley and Amos’s study (2015).

The reasons that were suggested above for stigmatising electronic cigarettes conform to the argument that people’s responses to risk can be non-reflexive and based on unarticulated assumptions and moral values, which are developed and shared by members of cultural subgroups (Lash, 1993). Also, that judging and reacting to risks and stigmas do not rely on the objective risk characteristics, technical or scientific risk studies solely (Kasperson et al., 1988; Gregory, Slovic and Flynn, 1996).

To summarise, uncertainty existed with regards to the level of electronic cigarettes’ acceptance in society. Participants discussed several reasons for accepting electronic cigarette use in society: harmless and/or pleasant vapour, a good understanding of electronic cigarettes, innovative and fashionable element, good publicity by media and cultural acceptance. However, the suggested reasons for not accepting or stigmatising electronic cigarettes were: harmful and/or unpleasant vapour, lack of knowledge or misunderstanding, bad media coverage, resemblance to cigarette, disapproval of addiction behaviour, fear of harm and cultural disapproval.

6.2.2.4. Risk of the Involvement Tobacco Companies

When asked about the involvement of the tobacco industry in electronic cigarettes, some users expressed concerns about such involvement, while others were not aware of such involvement. This might reflect a lack of transparent communication systems on the part of the tobacco industry in the electronic cigarette market. However, I believe this is an important social risk that requires exploration because it may reveal deeper moralistic and cultural issues, such as the link between the government, science and tobacco industry. It can also be an important mediating factor in shaping the growth of electronic cigarettes.

Two users highlighted the role of the tobacco industry in the electronic cigarette market, but with two contradicting views. One user (14N) believed that these companies are *“clinical criminals”*; he considered them his *“enemies”* because these companies *“help make the nicotine replacement therapy products. They’re putting up levels of nicotine in tobacco.”* Hence, when it comes to electronic cigarettes, *“they want a share of the action; that’s business”* (14N). Another point of view was forwarded by the following user, who believed that electronic cigarettes posed a threat to the popularity of traditional cigarettes and, therefore, the tobacco industry is trying to restrict the popularity of electronic cigarettes:

“The people who are trying to regulate them at the moment are the tobacco industry and obviously they are the ones that don’t want people to stop smoking. I think some of the regulations they are trying to put down on e-cigarettes is if they are being used as a way to kill them, or to make them redundant rather than to actually help them grow.” (9I)

The same user believed that tobacco companies, and he referred to *“Marlboro”*, want to monopolise the electronic cigarette market:

“I think my assumption is that the reason why they are trying to add these regulations to them is that, if they do add the higher regulations on them, it means that only Marlboro can make the devices, which means they can put any price tag on them.” (9I)

To the contrary, one user felt safer with a product manufactured by tobacco companies:

“I know a lot of people wouldn’t associate tobacco companies with safety, but at least, like the large multinational companies, they will have much more internal testing of these things than, you know, somebody working in their shed in Northumberland. So actually I

tend to trust the tobacco industry electronic cigarettes probably a bit more.” (12L)

The advisors were more strongly opinionated about the intentions of the tobacco industry to gain new smokers. The following advisor wanted electronic cigarettes to be used as a short-term treatment because:

“They made enough money from it. [There] needs to be a limitation and it’s not a way in for major cigarette companies to view it as an avenue for them to get new smokers.” (H1)

For one advisor, this involvement created a *“dilemma”*, as she questioned: *“So you have got a bit of a dilemma. Do you want to give out a product that ultimately has been made by a tobacco company?” (S6)*. Another advisor said: *“Why is it not regulated just yet and why are the British and American tobacco companies having a fight over the licensing? Is it not to keep the money in the same pot? So I don’t think people realise” (H4)*. However, the same advisor expected that a link with the tobacco industry can be a possibility in order to *“keep up with the times, and, you know, probably our clients want, and we’re very client-based, you know, we listen to our clients. So we’ll see.”* Such statement reflects the rise in consumerism, where patients act and are treated like consumers (Conrad, 2008: 15). This also signals the biomedicalization process of intensifying the focus on health and growth of the industry of health improvement (Clarke et al., 2003). The scepticism shown here about the tobacco industry mirrors similar concerns raised by several scholars who questioned the morality and intentions of the industry (see 1.4.4.) (Koop, 2004; Glover, 2006; Brownell and Warner, 2009; de Andrade et al., 2013; Hastings and de Andrade, 2013).

To summarise both themes, the perceptions of risk varied among participants. The following risks were identified. First, the physical risks included health and safety risk and nicotine use risk. Second, the social risks included: increased uptake of electronic cigarettes; developing an addiction to electronic cigarettes; maintaining nicotine addiction; gateway use; smoking renormalisation; risk of stigma; and risk of the involvement of tobacco companies in electronic cigarettes.

The emergence of electronic cigarettes does appear to have a range of characteristics that help to explain why some people are concerned about it: a novel device that may pose a health and safety risk; a threat to the young; and tobacco control policies with uncertain long-term effects. In the world view of some electronic cigarette users, electronic cigarettes

were not perceived as a hazard, as users were more inclined towards their psychological and social benefits. In this study, some users downplayed the health risk of the electronic cigarette and considered it a safe product. One advisor, however, augmented the risk and described it as “dangerous”. A key pattern in the representation of electronic cigarettes is the uncertainty and quandary associated with them. The electronic cigarette was represented as a safe product, a safer alternative to smoking, a therapeutic product, a clean nicotine delivery device, an innovation with potential long-term threats, and a risky object. It was also seen as a device that can create addiction, maintain nicotine addiction, a gateway to smoking and a gateway from smoking simultaneously. Hence, I argue that the coexistence of these different risk meanings and representations enabled electronic cigarettes to act as boundary objects (Star and Griesemer, 1989).

Following this description of the perceived risks of electronic cigarettes in both groups, I will discuss how these perceptions influenced the way electronic cigarette users assessed and managed those risks and link the discussion to sociology of risk.

6.3. Risk Assessment

This section discusses the ways electronic cigarette users assessed and managed perceived risk, linking the findings to sociology of risk.

Distrust of the Wider Political Climate

Most users were aware of the political, medical and scientific debate about the development, safety, regulations and risks of electronic cigarette use. Users expressed their confusion and revealed a level of suspicion of the political and professional climate. For example, one user sought information about electronic cigarettes and concluded that electronic cigarettes were much safer than tobacco; hence, he questioned the “conspiracy” and the negative climate that surrounded electronic cigarettes:

“I know Wales is starting to bring in bans, and some of the transport systems and some pubs. They sometimes say it is because people mistake vaping for smoking and they use that as an excuse. With two million people switching to vapes, and not buying tobacco any longer, the government is losing a lot of revenue.” (14N)

Another user expressed a similar opinion about the possible ban on electronic cigarettes. It reflected a deep mistrust in the political system which, the user believed, is concerned with financial gain rather than the citizens' health:

"I think the government approach to smoking needs to stop and needs to stop now, which I agree with but also disagree with. If you are to take every single smoker in this country today and get everybody to stop smoking at exactly the same time, the country's deficit will go up to 125 trillion pounds in less than 6 weeks, so they will have to substitute in some way the revenue that's lost from everybody stopping smoking, which is where I think these bans comes from." (3C)

A similar remark was put by another user, who also believed that the government makes a lot of money out of tobacco and that is why, she suggested, tobacco is still legal:

"Cannabis, why is that not legal, because it's less harmful than tobacco, you know, that's why the government has made it illegal here, you know, whereas like drinking – they make money, tobacco – they make money." (10J)

Nevertheless, one user believed that the political stance on electronic cigarettes is caused by fear of blame:

"Because if it turns out that there is bad stuff in the vapour then the politicians are gonna look stupid, aren't they? So they are being conservative, so they say until we know what's in it, we better be cautious about it." (8H)

This illustrates how, in a 'risk society', managing risks became a key part of the political decision-making (Giddens, 1999). Distrust of the pharmaceutical industry was also mentioned by one user:

"At one time margarine was better than butter, now they found out the margarine is worse than butter. This is it. A news they seem to come out every single month it seems to me these surveys come out solely to make people buy the products they are trying to push by telling people ok don't have electronic cigarettes; have patches. The electronic cigarettes are bad for you; patches are not. This comes out from research, from people who make patches but not electronic cigarettes" (13M)

Another user expressed mistrust in the political decisions and the influence of the tobacco industry on political decisions:

“I would say they are [tobacco companies] pushing, they have got very good friends in politics and Parliament and would say that it’s surely because the tobacco industry doesn’t want them [electronic cigarettes] to live.” (91)

This reflects Brown and Olofsson’s (2014: 426, 428) argument about risk being manipulated by different actors’ agendas, and how the interests of policymakers lead to risks being emphasised and problematised or ignored. It also conforms to Abraham’s (2008: 882) and Clarke et al.’s (2003) argument about the failure on the part of the pharmaceutical industry and big corporates to keep the interest of public health a priority and about the domination of biomedicine’s interests. As discussed in sections (3.3.3), stances on electronic cigarettes might reflect the deeper underlying social, economic and political context of drug use (Midanik, 2004; Mold, 2011; Campbell, 2012: 16; Hansen and Roberts, 2012).

Besides the distrust that electronic cigarette users showed towards the wider political and industrial climate, they also showed distrust towards the media, medical and scientific experts, as I discuss next.

Trust between Professionals and Electronic Cigarette Users

In Chapter 5 (see 5.4.), I discussed how users exhibited a sense of individual responsibility for improving own health. This personal accountability was fostered by the advisors’ approach when dealing with clients using the Stop Smoking Service, and by society overall. Personal choice was emphasised and empowerment was considered fundamental to achieve successful outcomes. Most electronic cigarette users in this thesis showed practices of self-regulation, self-monitoring and avoidance of risk, which many theorists argued have become a key feature of life in Western society (Giddens, 1991; Beck, 1992a; Armstrong, 1995; Nettleton, 1996). Electronic cigarette users, in this study, were not passively absorbing health messages about electronic cigarettes; rather, they made their decisions based on ‘mediated interpretation’ (Lupton, 1999: 87). They demonstrated their autonomy by actively seeking knowledge; engaging selectively with expert scientific knowledge; assessing risk and choosing to use electronic cigarettes (Lupton, 1999: 111), sometimes against the approval of a health professional. The data here revealed the ‘blurring

boundaries' between 'expert' and 'lay' opinions in the biomedical era (Clarke et al., 2003: 182), pointing to an emerging atmosphere of distrust between 'expert' and 'lay' due to the ambiguity of electronic cigarettes' risk (Beard, 2015). For example, two users (7G, 3C) described how they proved to their stop smoking advisors, who did not approve of them using electronic cigarettes, that electronic cigarettes helped them to stop smoking:

"My pharmacist, who I had done the stop smoking with, was aware of it [electronic cigarette] and he said he didn't think it will work and I keep proving him wrong every time I go." (3C)

Electronic cigarette users described the division among the medical profession's stance on electronic cigarettes. Some users were encouraged to use electronic cigarettes by doctors. For example, the following user said:

"When I was told that I have to give up by the surgeon, I asked him about it he said 'yes fine as far I am concerned if you are on electronic cigarettes you no longer smoke'." (3C)

Another user was recommended electronic cigarettes by his friend, who was a cardiologist. However, he commented on the conflicting messages about electronic cigarettes, as follows:

"I tend to read that, but the stories, at least, at the point where I was sort of deciding to use it, I looked into it. But the stories were so conflicting. It's like, you know, one set of doctors say it's perfectly safe, another set of doctors say it might be terribly dangerous." (11K)

Another user described the confusion that such conflicting messages created for electronic cigarette users:

"I think one doctor will say, you know, rather you smoke them than you smoke cigarettes and the other one will say no. My friend, when she went for her regular check-up with the nurse for her pill, the nurse stabbed the question: Still smoking? And she said: no I am vaping, and this nurse said: Oh brilliant, you know you are not smoking. I told my doctor I was vaping instead of smoking and he said: oooh, they are not regulated you know. For goodness sake, if I have said it to another doctor in another surgery they might have said: 'oh that's good'." (15O)

In the face of conflicting information, users' risk assessment involves active choice-making by weighing up the desirable outcomes against the negative consequences (Lupton, 1999: 76). As one user stated: *"I noticed differences in my breathing and my coughing so, to me, whatever any harm it might be doing, I can't see. The benefits I can see"* (150). Another user expressed confusion from the conflicting messages about electronic cigarettes, and stated that, after reading about electronic cigarettes, he believed they were unsafe products. He, however, still used electronic cigarettes because he perceived them to be better than smoking:

"I mean it's a fantastic thing in lots of ways, and it seems to me, or what I found, is that it gives you almost all of the benefits with none of the drawbacks, in the sense that, you know, it feels like you're smoking and it doesn't make you stink and it doesn't make you cough." (11K)

This echoes Fox's (1999: 30) explanation that, in a 'risky society', people judge the level of threat of an action or situation by evaluating the consequences of these actions or situations to themselves and to others. Most interviewees, in both groups, as discussed earlier, assessed the risks of electronic cigarettes by comparing those risks to risks of smoking cigarettes, focusing mainly on the relative risk rather than the absolute risk. Hence, the risk of electronic cigarettes, which is still under public and scientific debate, was faced by calculations of their unknown risk in comparison to the well-known risk of smoking. This comparison has provided an escape route for using electronic cigarettes and, to some extent, it legitimised their use. The extracts here represent the 'reflexivity' that electronic cigarette users exhibited when assessing the risk of electronic cigarettes (Beck, 1996; Giddens, 1992; 1999). Electronic cigarette users used complex and multi-dimensional ways to assess risk, which was not based solely on the possibility of causing harm (Hawkes and Rowe, 2008: 617). Electronic cigarette users' lay assessment involved a complex blend of both scientific and informal knowledge. For example, the following user assessed and managed the risk of his addiction in the lens of deeper religious beliefs:

"I had Ayurvedic medicine in India, they say that if you overtax any of your body organs, they will give up on you, they will stop working. So with alcohol, it's your liver, with smoking, it's your lungs and maybe developing cancer and stuff. So the end point of all of these addictions and habits is potentially illness. So anyone who is becoming ill through

any of these things has a choice to just stop and say, 'I'm going to let my body win now and heal.' So I'm the same with nicotine, is, yes it's been a constant friend to me for many, many years, but if I have to live without it, I have to live without it." (14N)

Electronic cigarette users clarified how they assessed and responded to the conflicting communicated risk through the media and the medical profession's advice. For example, when one participant was asked if she would stop using electronic cigarettes, if a news story recommended so, she answered:

"No, of course, I wouldn't... because I know I could pick up the next newspaper or see the next article and it will be... you couldn't be so bombarded with information." (15O)

The previous user responded to the conflicting advice by making her own judgement:

"It is what I feel like doing, if I want a glass of red wine I will have a glass of red wine, if I want a bottle of red wine I will have one, if I want Vimto I will have Vimto... I do what I want, I am old enough to make my own decisions now." (15O)

Another user described his approach in dealing with conflicting information: *"you hear what you want to hear"*. He explained:

"...if I like eating white bread and someone said white bread is bad for you, I don't necessarily say I am not going to eat white bread again. I think it is my personal decision on all the things I do, so in this particular case an electronic cigarette for me is cheaper than smoking." (13M)

Such findings conform to other risk studies that discussed how the lay audience responds to media in a complex way. So, they might challenge, resist and contest the dominant messages in the media (Wilkinson, 2001; Davin, 2003), or be cynical about the way the media portrays risk to attract readers (Lupton, 2005; 2006). The distrust that electronic cigarette users revealed in this thesis mirrors Beck's notion of contemporary risk and the formation of anxiety. Also, it reflects Giddens and Beck's work on lay people losing trust in experts on the risk issue, and the challenges they face in making decisions amid the conflicting technological information and expert disagreement (Lupton, 2006: 12). However, electronic cigarette users still acknowledged the effect experts' opinions had on their decision-making. Users showed a sense of self-governance, where there was an ongoing process of evaluating expert knowledge and information in relation to themselves and their

lives (Nettleton, 2002: 218). Risk perception was seen as a dynamic process that changes over time (Lupton and Tulloch, 2002). One user emphasised:

"I should keep my knowledge to the medical literature directly rather than relying on newspapers, which I probably would recommend that most people should do." (12L)

The next user also looked for a kind of consensus among the scientific studies:

"I don't have any plans to stop using it and don't get me wrong, if it said in a study that was released in a couple of months' time with 200 citation quotations that said that they have an undeniable proof that it is damaging some part of my body, I probably will stop using it." (9I)

Conforming to some theorists' views (Beck, 1992a; Giddens, 1991; Armstrong, 1995), reliance on experts and political risk management was still evidenced. Nearly all users approved regulating electronic cigarette use, especially in a way that would protect children and young people. For both groups, regulations meant ensuring electronic cigarettes' safety, clear labelling and age restriction use. Some users disapproved of the medicinal regulation as they believed it may create a barrier to electronic cigarette users. However, all the advisors agreed to the introduction of medicinal regulations to guarantee safety and efficacy. So, the data demonstrated the lack of knowledge about electronic cigarettes' hazards, the various official and media channels to exchange this knowledge, and the reliance on political regulations to control the risk of electronic cigarettes.

To conclude, in their risk assessment, the participants predominantly compared electronic cigarettes to conventional tobacco smoking to justify their use, but uncertainty was prevalent. The majority of electronic cigarette users showed knowledge about the current scientific and medical debate about electronic cigarettes and weighed the pros and cons of electronic cigarette use. Electronic cigarette users incorporated into their decision-making strategies deeply held values and beliefs in relation to both, a scepticism of 'expert' knowledge and a belief and trust in their own rational judgement. Even though electronic cigarette users in this study did not necessarily accept the professionals' assessment of electronic cigarettes' risk, they agreed that regulations to guarantee the safety of electronic cigarettes, but not to restrict their use, were needed.

6.4. Discussion

In this chapter, I showed how perceptions of risk associated with electronic cigarettes were embedded within a hybrid combination of habit, personal preference, social relations, economic constraints, trust and health concerns (Horlick-Jones and Prades, 2009: 409). In this section, I discuss how the construction of electronic cigarettes' meanings and their formation as boundary objects are influenced by biomedicalization processes. At the same time, these processes, I argue, are formed and steered by the influence of risk perceptions of electronic cigarettes.

The data in this chapter, as well as the previous one, showed that risk perceptions of electronic cigarettes and processes of calculating and managing those risks represent the increased focus on individualisation in the biomedical era (Lupton, 2006). Electronic cigarette users acknowledged their responsibility of improving their health. They sought access to knowledge, through different platforms of media and medical expert consultations. They monitored their health; were aware of the different risks of nicotine and smoking, as information had been provided by the circulated biomedical knowledge; they reflected upon those risks and, consequently, they made their active decision to deal with their addiction and use electronic cigarettes (Clarke et al., 2003: 162). The biomedical model, therefore, influenced the construction of different meanings of electronic cigarettes and, hence, influenced the formation of electronic cigarettes as boundary objects.

The different perceptions, of how risky electronic cigarettes are, have influenced the stances, attitudes and risk assessment strategies that different actors exhibited towards electronic cigarettes. This, I argue, is where the formation of electronic cigarettes as boundary objects influences biomedicalization. According to Lupton (1999: 25), 'risks are constructed and negotiated within the networks of interaction and meanings that people hold'. The data show a high level of ambiguity of risks associated with electronic cigarettes. The divergent opinions about the nature, level and seriousness of electronic cigarettes' risk, along with the different reasons for using electronic cigarettes and different perceptions of electronic cigarettes' status and efficacy, as discussed in Chapter 5, formed electronic cigarettes as boundary objects. Further, electronic cigarettes enabled diverse social worlds, as well as people with different views about electronic cigarettes, nicotine and smoking, to

communicate without consensus (Star and Griesemer, 1989: 388). For example, the belief that electronic cigarettes are safer than smoking was a reason for many participants in both groups to accept the use of electronic cigarettes, in spite of inconclusive safety evidence. So, electronic cigarettes have transformed from an anchor of difference into a bridge of similarity (Star and Griesemer, 1989: 392), and functioned as translational boundary objects. The advisors, who perceived that electronic cigarettes might be risky objects, saw their potential to be a “piece in their armoury”; they were able to work together with clients who used and perceived electronic cigarettes differently. The data showed that electronic cigarettes have become popular and accepted by some members of society and health personnel, despite the concern about stigma. This, I argue, signifies the linkage between processes of biomedicalization and the formation of boundary objects, resulting in creating ‘new sites of negotiation’ and ‘new social and cultural forms’ (Clarke et al., 2003: 185). Also, in this chapter, the new link between the tobacco industry and governmental organisations was highlighted as another example of the translational function of electronic cigarettes, thus confirming my argument of the boundary objects’ influence on steering biomedical processes.

The different representations that electronic cigarette users hold for the new biomedical innovation (i.e. electronic cigarettes) have become a shared understanding, thus creating the new ‘vaper’ identity with new forms of ‘empowerment’, ‘confusion’, ‘resistance’ and ‘responsibility’ (Clarke et al., 2003: 185). Users highlighted the unity of “*fellow people who smoke vapes*” in their reaction to possible restrictions on electronic cigarette use and demonstrated ‘the division of “expert” versus “lay” knowledges’ (Clarke et al., 2003: 177). At the same time, the new modes of proliferating knowledge have provided a platform for different actors to communicate their experience and knowledge about electronic cigarettes, and hence contributed to the growth of knowledge and use of electronic cigarettes. I demonstrated how users, through the media and the use of technoscientific ways of communication, were aware of the current political, medical and scientific debate about the development, safety, regulations and risks of electronic cigarettes (Clarke et al., 2003: 176; Turner and Khondker, 2010: 120). Hence, technoscientific ways of communications facilitated the formation and nurturing of the vapers’ new identity and, in turn, facilitated the existence of electronic cigarettes as

boundary objects. The media and proliferation of knowledge represent the struggle and battles between different social worlds; hence, this process is important in the formation of electronic cigarettes as translational boundary objects because it allows for different social worlds to coexist and negotiate. Yet, at the same time, the process is steered by the power of these different social worlds.

To conclude, this section explained how processes of biomedicalization have mediated the meanings and use of electronic cigarettes. Focusing on risk and personal responsibility signifies the biomedical era. Biomedical advances facilitated new linkage and forms in the field of electronic cigarettes. Also, the proliferation of knowledge channels produced different opinions and meanings for electronic cigarettes; hence, facilitating the formation of electronic cigarettes as boundary objects.

6.5. Chapter Summary

This chapter examined how the novel phenomenon of electronic cigarettes was assimilated and represented as a risk - or not - in the accounts of both stop smoking advisors and electronic cigarette users. I illustrated how the perceptions of risk varied among participants. A key pattern in the perceptions of electronic cigarettes is the uncertainty and quandary associated with them. The following risks were discussed. First, the physical risks including health and safety risk and nicotine use risk. Second, the social risks including: increased uptake of electronic cigarettes; developing an addiction to electronic cigarettes; maintaining nicotine addiction; gateway use; smoking renormalisation; risk of stigma; and risk of the involvement of tobacco companies in electronic cigarettes. I described how the different perceptions of risks enabled the formation of electronic cigarettes as boundary objects. I discussed how processes of biomedicalization have mediated the meanings and use of electronic cigarettes, and how, at the same time, the formation of electronic cigarettes as boundary objects has an influence on these processes. I linked risk perceptions of electronic cigarettes and risk assessment with the wider sociology of risk. The narratives of the participants demonstrated an individualisation approach to risk, and a political and social awareness of the structural underpinnings of electronic cigarettes' risks that necessitate government involvement. The final chapter will discuss the findings of the two

data sources (electronic cigarette users and stop smoking advisors) by looking at commonalities and differences.

Chapter 7: Conclusion

7.1. Introduction

The aim of this chapter is to consolidate the findings and to highlight the disagreements and commonalities between the perceptions of electronic cigarettes drawn on by electronic cigarette users and stop smoking advisors in a South East England-based qualitative study. I discuss how electronic cigarettes as boundary objects can function as translational and facilitative objects between different actors who construct different social meanings of electronic cigarettes. I reflect on the theoretical underpinnings of my empirical investigation (boundary objects theory and biomedicalization), which, taken together, provided a useful framework that enhanced my understanding of the electronic cigarette perceptions in my sample. I clarify how the different social meanings attached to electronic cigarettes are impacted by the wider political, cultural and technological processes of the biomedicalization theory. I also argue that biomedicalization processes are the outcome of divergent, but coexisting, perceptions and meanings.

In the two previous chapters I have demonstrated how electronic cigarettes are represented as an ambiguous device. In this chapter, I draw on this key theme and the various themes that emerged throughout the data analysis. I discuss how electronic cigarettes bring with them opportunities and threats; how electronic cigarettes challenge the contemporary social meanings of addiction; and how new innovations can prompt wider social and political changes. In the first part of this chapter, I discuss the thematic framework of the findings with a general link to relevant literature. Second, I examine the link of electronic cigarettes to biomedicalization and then explain why I consider electronic cigarettes as boundary objects. Third, I discuss how both theories (boundary objects and biomedicalization) are interlinked. I conclude this chapter by discussing the strengths and limitations of my study and outline some opportunities for further research that could be built upon the findings. I suggest recommendations to policy and practice with regard to how the findings of this qualitative study could be used to improve services and outcomes for smokers and electronic cigarette users. Finally, I highlight the novel contribution of my research to the literature.

7.2. Research Questions and Findings Overview

Electronic cigarettes have created a quandary (Cahn and Siegel, 2011; The Lancet, 2013; Bialous and Sarma, 2014; Bullen et al., 2014; O'Connor and Fenton, 2015). The following questions have been asked: Is the electronic cigarette a recreational or therapeutic product? Is it an extension for smoking or nicotine replacement therapies? Is it a consumer product or a pharmaceutical product? Is it health-enhancing or health-damaging? Is it a promise or a threat? Electronic cigarettes seem to have many identities and possible meanings and, as such, have become an issue that attracts controversy among public, scientists and politicians (RCP, 2016). In the introduction to this thesis, I proposed the boundary objects theory (Star and Griesemer, 1989) as an approach for understanding the social construction of electronic cigarettes among two groups of electronic cigarette users and stop smoking advisors. I also proposed the use of biomedicalization theory (Clarke et al., 2003) to explain how particular advances in relation to electronic cigarettes make the case for electronic cigarettes to be considered a manifestation of the biomedicalization era. Further, I proposed that the construction of electronic cigarettes' meanings and their formation as boundary objects are influenced by biomedicalization processes. At the same time, these processes, I argued, are formed and steered by the influence of electronic cigarettes' diverse perceptions, presenting the role of human behaviours in shaping social reality (Garrety, 1997; Fox, 2011; Kaye, 2012).

I found using both underlying theoretical concepts advantageous for two reasons. Firstly, they provided a useful starting point to explore the different meanings and perceptions in the two data sources. Secondly, they helped to identify several key factors that have shaped the construction and development of different meanings and perceptions of electronic cigarettes, and to explain the relational, significance and influence of these meanings. I have illustrated in the preceding chapters the diversity of perceptions about electronic cigarettes among my data. Applying boundary objects theory has enabled me to elaborate and explain the commonalities and disjunctures between the two data sources. It helped me to identify the role of the human agents on the construction, resistance or dominance of biomedicalization processes. Further, the biomedicalization concept helped me to explain the wider social, cultural, technological and historical context that has influenced the various meanings and perceptions of electronic cigarettes. Overall, the

framework allowed for a deeper understanding of the phenomenon of electronic cigarettes in my sample.

One of the biggest challenges for me was how to deal with the inherent biases that have shaped my research, whether intentional or unintentional. In my role as a researcher, I realised the paramount importance of self-awareness and reflexivity. This is because my biography as a dentist or a public health advocate has the potential to bias data collection and analysis because of my unique social experience. Grosz (1995: 13) argued that no matter how aware and reflexive the researcher tries to be, 'the author's intentions, emotions, psyche, and interiority are not only inaccessible to readers, they are likely to be inaccessible to the author herself.' Hence, I am aware that there may be limits to my reflexivity and self-awareness. I am also conscious that subject accounts are not entirely transparent. I am not assuming that what my participants said in an interview context gave me direct access to their subjectivity and lived experiences, nor am I claiming that I captured their voices and stories and produced an accurate account of their experiences (Mauthner and Doucet, 2003). However, when I analysed my data my view was that 'subjects are reflexively constituted between the researcher and the researched' and that by means of research, it is possible to gain some knowledge of their articulated experience and subjectivity (Doucet and Mauthner, 1999; Mauthner and Doucet, 2003). As far as I was aware, my participants seemed happy to share their stories and lived experiences with me. For example, one user was extremely keen on showing me his electronic cigarette and explaining how it works. I have tried to make my interviews a two-way interaction process and not just a process of collecting information from 'subjects'.

As this is my first qualitative research project, the enthusiasm I experienced at the beginning during my interviews led me to believe that I had captured the voices and may be at least a partial subjectivity of my participants. However, with hindsight I am aware that my academic and personal biographies might have affected my choice of academic texts and the literature that guided my research. I am also mindful of how this combination of academic and personal biographies might have led me to particular ways of engaging with and interpreting my data during my data analysis process. My personal and clinical experiences, in addition to my review of the literature, influenced how I approached this study and what I initially expected to arise from the data. For example, I thought that

participants would be more worried about the lack of safety evidence on electronic cigarettes; I thought that the internet and social media platforms would play a major role in encouraging the use of electronic cigarettes among my electronic cigarette users; I assumed that the users would have a stronger trust in the scientific, medical and official opinions on electronic cigarettes. I also assumed that the advisors might be sceptical about the value of electronic cigarettes as a stop smoking aid. I expected that the advisors would be less transparent in sharing their personal opinions with me due to their official position. Similar to the position that the majority of the advisors took, I was keen on the use of electronic cigarettes therapeutically rather than recreationally; however, listening to the experiences of my participants has altered my views. I hope I am now more considerate to people who struggle with their addiction and who substitute their addiction to cigarettes with electronic cigarettes.

It is recognised that it is not only the personal or academic biographies that influence the choices and decisions that the researcher makes with regard to ontology, epistemology, methodology, theories, and research methods, 'but the interpersonal, political and institutional contexts in which researchers are embedded also play a key role in shaping these 'decisions'' (Bell and Newby, 1977; Bell and Roberts, 1984 in Mauthner and Doucet, 2003: 421). Accordingly, my research (as I highlighted in the methodology chapter) was shaped by factors such as the lack of participation and the ethical approval processes. Throughout the interview process, I was aware that the field of electronic cigarettes is developing continuously and quickly. I acknowledge that the field has changed since I started my first interview in April 2014 until the time I conducted the last interview in July 2015. For example, I was aware of the expansion of electronic cigarette marketing and local shops, the ongoing debate about electronic cigarettes in the media, the introduction of new 'generations' of electronic cigarettes and the different stances that different organisations and countries showed towards electronic cigarette use. The perceptions and experience of my participants may have changed due to some of these factors. For example, the new regulations that allow electronic cigarettes to be sold as a medicine and a consumer product may have reduced the ambiguity associated with electronic cigarettes which I identified in my study.

Before presenting the juxtaposition of the research findings, I want to emphasise that both the electronic cigarette users and the stop smoking advisors groups were not homogeneous; rather, they were heterogeneous in their attitudes, values and beliefs. Both expressed different perspectives and opinions on the discourse and role of electronic cigarettes. My findings suggest that the electronic cigarette users draw on their personal experience, smoking history, stories circulated in the media and other cultural factors to construct their perceptions and attitudes towards electronic cigarettes. The advisors' views and attitudes are shaped by their personal beliefs, experience and official duties towards their clients. Although both groups showed a level of similarity in their perceptions and attitudes towards electronic cigarettes, different stances were exhibited by different participants. Nearly all my electronic cigarette users' group expressed a positive experience when using electronic cigarettes. Electronic cigarette users varied in their gender, age, job status, smoking status, quitting history and their aim of using electronic cigarettes. They used different brands, designs, flavours, nicotine concentration and showed different reasons for using electronic cigarettes and different use patterns. They seemed to enjoy several aspects of electronic cigarettes, some compared them to normal cigarettes and others compared them to other nicotine replacement products. The majority had struggled with their past quit attempts using other methods and found electronic cigarettes to be more helpful. Although those who attended the Stop Smoking Service may have seemed to be more committed to quit smoking and eventually to stop using electronic cigarettes, other users who were not using the service also expressed a strong desire to stop electronic cigarette use at some point in the future. Some even explained their personal plan to stop their use. Social acceptance and endorsements seem to be an important aspect in encouraging the use of electronic cigarettes besides the cheaper expense; tobacco- free odour; the ability to use them indoors; the different flavours and their relative safety compared to traditional cigarettes.

The advisors showed a mix of opinions and attitudes. The majority were more inclined towards their traditional regime of stopping smoking and eliminating nicotine use. The advisors, who encountered cases of people struggling with their smoking addiction, saw the benefits of electronic cigarettes as a harm reduction tool and a substitute to smoking. In general, although the advisors were more comfortable using their prescription list of

licensed nicotine replacement therapies, some showed an openness towards electronic cigarettes and understanding of the reasons for their popularity. I sensed a dilemma between their official stance and their obligation to adhere to their traditional regime in treating smoking addiction on the one hand and their acknowledgment of the possibility of effective use of electronic cigarettes as a harm reduction tool on the other. A few advisors noted that the different age groups might have different goals. They suggested that the older age group used electronic cigarettes to stop smoking, whilst the younger users used them as a fashion item or to try different flavours. Users in this study used electronic cigarettes both recreationally and therapeutically, with some pointing to the roles of flavours and designs in attracting them to use electronic cigarettes. Due to the small number of participants, I did not differentiate the perceptions, attitudes and reasons for using electronic cigarettes by socio economic factors such as age, gender, ethnicity and social class. The study was purposely small and aimed to gain an understanding of the different perceptions and attitudes that both groups hold of electronic cigarettes.

Next, I present the research questions and provide a thematic framework (Figure 1), which presents the overall findings of my analysis.

- 1) How are electronic cigarettes perceived by electronic cigarette users and stop smoking advisors?
- 2) What are the perceived risks associated with electronic cigarettes, as discussed by electronic cigarette users and stop smoking advisors?
- 3) What factors have shaped these perceptions of electronic cigarettes?

I suggest that the ways in which perceptions are constructed and used can be classified as: i) an electronic cigarette as an ambiguous novelty; ii) an electronic cigarette as a means for empowerment; and iii) an electronic cigarette as a means for social change. These representations are occurring simultaneously, are dependent on one another and are in constant negotiation. All my data exhibit a high level of ambiguity regarding electronic cigarettes' status, efficacy and potential risks; however, the data also show different perceptions of electronic cigarettes that are related to a biomedical model of understanding and managing nicotine addiction, where individualisation and empowerment are at the core. Lastly, the data show a potential for social change towards a socially acceptable

recreational use of nicotine that mimics smoking, in spite of some electronic cigarette users' concern about stigma. This chapter will discuss this thematic framework of the findings.

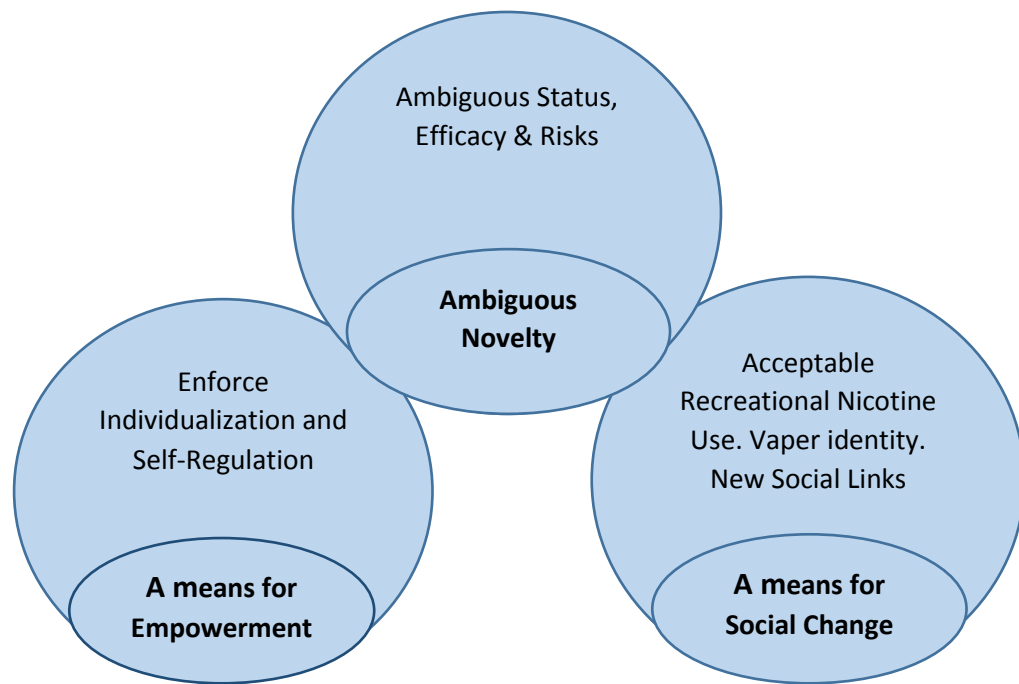


Figure 2: A thematic framework of the perceptions of electronic cigarettes.

In this chapter, I demonstrate that the understanding of electronic cigarettes as an ambiguous device is prevalent among the two data sources. I believe that applying triangulation by collecting data from two sources has enabled the perceptions of two distinct groups to emerge, as my findings below demonstrate. While I do not suggest that the interpretations I present are the only elements which make up the representations of the electronic cigarette as an ambiguous device, a means for empowerment and a means for social change, I argue that these are the key interpretations and meanings that my participants draw on to make sense of the phenomenon of electronic cigarettes within their social and personal accounts. Hence, they enable electronic cigarettes to become boundary objects that act as both translational and facilitative devices by allowing different social groups to communicate and act with regard to electronic cigarettes. As we will see below, my data show how the worlds of ‘good’ nicotine use and ‘bad’ nicotine use have become entangled.

7.3. An Electronic Cigarette as an Ambiguous Novelty

In my analysis, the ambiguity of electronic cigarettes is evidenced through highlighting the following aspects: i) the ambiguity of electronic cigarettes' status and efficacy; ii) the ambiguity of the physical risk; and iii) the ambiguity of the social risk. I discuss these in turn below.

7.3.1. The Ambiguity of Electronic Cigarettes' Status and Efficacy

The data from this thesis show that electronic cigarettes are perceived and used both as therapeutic and recreational products. There is no consensus on one classification over another, as different actors held different perceptions. My findings suggest that participants in this study construct electronic cigarettes as an ambiguous device due to their different perceptions and experiences of electronic cigarettes.

While some electronic cigarette users described electronic cigarettes as a treatment, others disagreed with such classification. The majority of electronic cigarette users confirmed that they used electronic cigarettes to help them quit smoking. This conforms to other studies, which provided evidence that electronic cigarettes have been used, mostly, as an aid to quit smoking (e.g. Adkison et al., 2013; Brown et al., 2014b; Dawkins et al., 2013; West, 2014; ASH, 2016b). Some users verbalised their intention to stop using electronic cigarettes, while others expressed their desire to continue their use, similar to findings from other surveys (ASH 2015a, 2016b). Nearly all the electronic cigarette users in this study opted to use electronic cigarettes to improve their health. Two users switched to electronic cigarettes to save money without referring to any health concerns.

The majority of electronic cigarette users found electronic cigarettes to be as effective as, or more effective than, other available treatments. Electronic cigarettes' efficacy as a substitute to smoking was attributed to the electronic cigarettes' ability to replicate the habits and rituals of smoking, the comfort and enjoyment they offer and their efficacy in delivering nicotine. Electronic cigarettes relieved withdrawal symptoms and helped in avoiding a relapse to smoking. Most users liked the similarity of electronic cigarettes to traditional cigarettes. The data suggest that electronic cigarettes may have attracted users because of their innovative modernistic features; flavours; reduced cost compared to cigarettes; tobacco-free smell; social acceptability; the possibility to use them indoors and

the possibility of customising them according to an individual's needs and desires. The data also suggest that some users used electronic cigarettes as a hobby and a social activity. These findings support the results in the literature, which discussed motivations for using electronic cigarettes (e.g. Etter and Bullen, 2011; Pearson et al., 2012; Dawkins et al., 2013; ASH, 2014b; 2016b). One of the reasons reported in this study is the endorsement and encouragement to use electronic cigarettes instead of smoking, especially by friends, family and, sometimes, by health personnel. This opposes other findings, where some vapers reported stopping using electronic cigarettes based on the advice of a health professional (ASH, 2016b).

For stop smoking advisors, data from this study show that, while electronic cigarettes were represented by some advisors as a treatment for nicotine addiction and a '*self-medication*' tool, others described them as recreational alternatives to smoking. The advisors acknowledged that electronic cigarettes were mostly used as an aid to quit smoking and some agreed that they could be as effective as, or more effective than, other available treatments. Some advisors envisaged electronic cigarettes' particular benefits for certain types of smokers, such as heavily addicted smokers and those with serious health conditions. They also acknowledged the physiological and psychological substitution that electronic cigarettes provide, but they disapproved with the resemblance of electronic cigarettes to conventional cigarettes and found that to be a hindrance to successful quitting. It is apparent, however, that the advisors wanted electronic cigarettes to be part of their '*armoury*', aiming at stopping nicotine use. Hence, they asserted the importance of regulating electronic cigarettes, similar to other pharmacotherapies they prescribe.

This study adds to the debate about the perceived efficacy of electronic cigarettes compared to nicotine replacement therapies. Participants in one study did not link electronic cigarettes to quitting as they did with nicotine replacement therapies, and found that electronic cigarettes do not substitute the stress relief characteristics of normal cigarettes (Rooke, Cuning-Burly and Amos, 2015). To the contrary, in this study, participants from both groups found that electronic cigarettes can be as effective as, or more effective than, other nicotine replacement therapies. These differences in the findings reflect the former study's conclusion that 'different groups of smokers bring diverse expectations, requirements and concerns to their evaluations and therefore to the potential

use of nicotine-containing products'. My data showed electronic cigarettes were used in stressful situations, as was found by another study (Rutten et al., 2015). The data from this study support other studies that showed the importance of the unique sensory cues, mimicking the rituals associated with traditional smoking and their role in the growth of electronic cigarettes use (e.g. Caponnetto et al., 2011; Polosa et al., 2011; Fagerström, 2012; Barbeau, Burda and Siegel, 2013; Caponnetto et al., 2013).

The findings expose two important issues. First, the lack of consensus on the reasons for using electronic cigarettes, and the status and efficacy of electronic cigarettes, among the data sources; second, the lack of consensus on accepting harm reduction in nicotine addiction. The advisors in this study focused on eliminating nicotine as a major goal. This concurs with the disagreements among public health personnel over harm reduction and electronic cigarettes, as I discussed in the literature review (RCP, 2007; 2016; Elam and Gunnarsson, 2012). Users, however, placed electronic cigarettes in a smoking quitting continuum, where electronic cigarettes can have multi-facets of usage, incorporating recreational and therapeutic use.

7.3.2. The Ambiguity of Electronic Cigarettes' Physical Risk

Most users acknowledged the addictive nature of nicotine; their views ranged between considering nicotine to be '*not very good*' to being a '*poison*'. They demonstrated different levels of nicotine use, from using zero nicotine to consuming extra nicotine. The advisors showed concerns about the addictiveness of nicotine and the extra consumption of nicotine. My data highlighted concerns about the safety of electronic cigarettes and their potential effects on health. There was a concern about the lack of evidence of long-term health implications and a concern about the potential health risks on non-users and children in particular. However, the advisors tended to express more negative assumptions with regards to electronic cigarettes' safety and health implications. They justified their concerns by the fact that electronic cigarettes were not regulated, licensed or recommended by the leading health organisations in the UK. Electronic cigarette users' perceptions of safety ranged between perceiving electronic cigarettes to be safe, safer than smoking and not knowing if they are safe or not. Some health improvement was described by some users, but one user complained about how his electronic cigarette had affected his throat (see 6.2.1). The anxieties that were expressed by some users resulted from the uncertainty of

the outcome of electronic cigarette use. These concerns echoed the uncertainties discussed in the literature review and by the advisors.

Other studies showed participants' concerns about the safety of electronic cigarettes and their influence on health (e.g. Muñoz et al., 2014; Beard et al., 2014; Hiscock et al., 2014; Sherratt et al., 2015a, b; Rooke, Cunning-Burly and Amos, 2015). Similar to my findings, concerns about the long-term effects of using electronic cigarettes were particularly expressed (e.g. McQueen, Tower and Sumner 2011; Baweja et al., 2016). Participants in other studies reported perceiving electronic cigarettes to be safe (e.g. Goniewicz, Lingas and Hajek, 2013). Also, an improvement in health was reported (e.g. Heavner et al., 2009; Dawkins et al., 2013). Side effects affecting the throat were reported as well (e.g. Etter, 2010; Hajek et al., 2014). Some participants, in this study, mentioned negative design issues which affected the safety of the product, such as leaking bottles, similar to other studies (Etter, 2010; McQueen, Tower and Sumner, 2011). It is, however, evident that the rhetorical argument about the relative safety of electronic cigarettes in comparison to traditional cigarettes is prevalent among my data. Participants in other studies believed the risk of electronic cigarettes is less than the risk of cigarettes (e.g. Pepper and Brewer, 2013; Peters et al., 2013; Sutfin et al., 2013; Brown et al., 2014b; Tan and Bigman, 2014; Pepper et al., 2015). Overall, uncertainty was evident in both groups, similar to findings from other studies (e.g. Sutfin et al., 2013; Pepper and Brewer, 2013; Rooke, Cunningham-Burley and Amos, 2015; Sherratt et al., 2015a, b).

7.3.3. The Ambiguity of Electronic Cigarettes' Social Risk

Some advisors and electronic cigarette users highlighted concerns over maintaining nicotine addiction and developing an addiction to electronic cigarettes. Both sides provided evidence of this already happening. Both Beard et al.'s (2014) and Hiscock et al.'s (2014) studies pointed at similar concerns by the stop smoking advisors and managers in Stop Smoking Services. Other studies discussed maintaining the addiction (e.g. McQueen, Tower and Sumner, 2011; Al-Delaimy et al., 2015; Rooke et al., 2015). Further, there was a divide in opinion as to whether electronic cigarettes can attract new users and be a gateway to smoking, reflecting the existing disagreement in the literature (e.g. McMillen et al., 2012; Corey et al., 2013; Bell and Keane, 2014; Bauld, 2016). A different position was apparent when discussing a ban on electronic cigarettes in public places. Most advisors were worried

about renormalisation of smoking and they favoured a ban on electronic cigarettes in public places. On the other hand, similar to other studies, most users did not agree with banning electronic cigarettes (Etter, 2010; Etter and Bullen, 2011; McQueen, Tower and Sumner, 2011). These results do not agree with Pepper and Brewer's (2013) systematic review, who could not find any argument by users that electronic cigarettes should be exempted from Smokefree indoor regulations. Participants in other studies revealed using electronic cigarettes everywhere (Peters et al., 2013), and in locations they would not normally have smoked tobacco (Sherratt, 2015b). However, the majority of users in this study said that they tend not to use electronic cigarettes around others unless they asked for permission, and that they mostly use electronic cigarettes outdoors.

Further, the risk of the tobacco industry's involvement in the electronic cigarette market was highlighted by both groups (see 6.2.2.4). It is worth noting that this concern was higher among the advisors than the users, who were not all aware of such involvement. The scepticism shown in this thesis about the tobacco industry mirrors similar concerns raised by several scholars (see 1.4.4.), who questioned the morality and intentions of the industry (e.g. Koop, 2004; Glover, 2006; Brownell and Warner, 2009; de Andrade et al., 2013).

An important finding of this thesis is the *concern about stigma* that some electronic cigarette users expressed. Some users felt that electronic cigarette use is not socially acceptable and were concerned that the stigma attached to smokers might shift to electronic cigarette users. However, the advisors, in general, viewed electronic cigarettes to be socially acceptable, especially when compared to smoking. Although the stigma concern was highlighted in the literature (e.g. Shickle, 2009; Voigt, 2015) (see 2.4.1.), there are no studies that have addressed this issue with regards to electronic cigarettes specifically.

The rationale for accepting or stigmatising electronic cigarette users, in this thesis, was linked to the following reasons: vapour, knowledge, media, culture and group differences, safety, novelty, appearance and attitudes towards addiction behaviour (see 6.2.2.3). These reasons conform to the argument that people's responses to risk can be non-reflexive and based on unarticulated assumptions and moral values that are developed and shared by members of cultural subgroups (Lash, 1993). Some of these reasons were linked to stigmatising other conditions. For example, ambiguity and fear were linked to stigmatising other biotechnological innovations, products, health conditions and behaviours (e.g.

Garrick, 1998; Stuber, Galea and Link, 2008). The lack of transparent communication of technical or scientific risk studies about electronic cigarettes in the media may lead to creating 'technological stigmas' (Garrick, 1998; Zwick, 2002a). Indeed, although both the benefits and risks of electronic cigarettes have been heavily communicated in the media, there has been a concern about health scare stories (McNeill et al., 2015), warnings about a growing 'false perception [about] risks' and a call for clear communication of the 'relative safety' of electronic cigarettes (ASH, 2015b; West, Beard and Brown, 2016).

When discussing stigma, we need also to consider the cultural significance and the racial division attached to substance use (Mold, 2011; Netherland, 2012; Hansen and Roberts, 2012). Social unacceptance and denormalisation of tobacco use policies, it was argued, resulted in stigmatisation of smokers, created unacceptable social environment towards smokers and succeeded in changing social norms, values and attitudes regarding smoking and smokers (Kim and Shanahan, 2003; Bayer, 2008; Bell et al., 2010; Ritchie, Amos and Martin, 2010). As shown in the literature review, stigma has played a role in reducing cigarette consumption and smoking prevalence (e.g. Alamar and Glantz, 2006; Helweg-Larsen et al., 2010; Amonini, Pettigrew and Clayforth, 2015). Accordingly, denormalisation of electronic cigarette use policies may result in the stigmatisation of vapers; and, if the stigmatising of electronic cigarettes spreads, smokers who might benefit from electronic cigarettes could lose an opportunity that could improve their health and potentially save their lives.

The implication of *concern about stigma* can be noted in the electronic cigarette users' behaviour and attitudes. According to Lupton and Tulloch (2002: 331), different people and social groups understand and perceive risk differently. Hence, electronic cigarette users were aware of this 'reflexive awareness of risk' among different groups and cultures and, therefore, the majority reported using electronic cigarettes within an environment that accepted electronic cigarettes. They spoke about the endorsement they received from family members, friends and, sometimes, health personnel. This is important because the social norm that disapproves of smoking, especially the disapproval of family and friends, was believed to be a factor that contributed to forming smoker-related stigma (Stuber, Galea and Link, 2008). Similarly, in the field of electronic cigarettes, Sherratt et al. (2015a: 9) suggested that social endorsement 'could contribute towards the formation of attitudes

around social acceptability'. Users in this study attempted to disassociate themselves from the stigma that surrounded smokers and to create new social norms to avoid social exclusion (Gibbs, 1965). They highlighted the difference between smoking and vaping and the relative safety of electronic cigarettes.

To avoid stigma, one user verbalised not wanting to be associated with smoking by keeping her vaping secret, as she also kept her smoking habit a secret. Another user clearly explained that she did not approach the Stop Smoking Service to support her in her quit attempts because she feared being stigmatised. Such findings conform to other studies that addressed stigma and smoking (e.g. Stuber and Galea, 2009; Stuber, Galea and Link, 2009; Bell et al., 2010). It was argued that, for some smokers, the 'felt normative stigma' was a motivation to avoid the service in order to avert 'enacted stigma' (Scambler, 2009). In this study, electronic cigarette users did not experience 'enacted stigma', but they showed a concern that it may develop in society. The majority, however, resisted the 'internalised stigma' and 'self-stigma' (Steward et al., 2008: 3) that smokers grew to accept in the West. For example, they disapproved a ban on the use of electronic cigarettes in public places and highlighted the lack of evidence of causing harm to others. Users spoke about their right to use electronic cigarettes without being stigmatised, shamed or blamed (Schneider and Conrad, 1980; Scambler and Hopkins, 1986; Scambler and Paoli, 2008). This opens the debate into the ethical complexities of attempting to manipulate social norms to change an individual's behaviour through restricting the use of electronic cigarettes without evidence of harm to others (Voigt, 2015). Next, I will discuss the risk of electronic cigarettes within the wider sociology of risk.

7.3.3.1. Link to Sociology of Risk

Risks from electronic cigarettes, I argue, signal the 'risk society'. This risk is a 'manmade' and 'manufactured risk' (Beck, 1992a, 1996; Giddens, 1999: 4; Lupton 1999: 198). Smoking and vaping may exemplify a threat caused by the misuse of a natural product (nicotine). The emergence of the electronic cigarette does appear to have a range of characteristics that help to explain why some people are concerned about it: a novel device that may pose a health and safety risk, a threat to the young and tobacco control policies, and uncertain long-term effects (NICE, 2013a; McNeill et al., 2015). Risk has been at the core of the electronic cigarettes' debate, hence reflecting the pervasiveness of the risk phenomenon in

Western society (Lupton, 1999; Mitchell and McClean, 2014). Generally, my data discussed notions of potential risk, or things that *might happen*, as a result of using electronic cigarettes rather than existing or present harm (Adam and Loon, 2000). Representing a 'risk society', it was mostly electronic cigarettes' possible long-term effects, their potential future risks and measures to preventing and managing those risks that were constantly debated within the data (Giddens, 1999; Beck, 2006). The ambiguous electronic cigarettes that 'no one understands completely' signify 'a high technological frontier' with different possible futures (Giddens, 1999: 3) and unexpected uncertainties (Beck, 1992a).

In the literature review, I discussed how trust in the medical, scientific and political systems plays a major role on individual risk perception, decision-making strategies and normalising technologies (e.g. Kasperson et al., 1992; Hawke and Rowe, 2008; Brown, 2009; Bröer et al., 2014). The relation between the advisors and electronic cigarette users in this study did not represent an 'expert'/'lay' relation where expert knowledge assumes superiority over service users' knowledge. My data showed the simultaneous distrust and reliance on 'expert' knowledge (Giddens, 1991; Lupton and Chapman, 1995; Nettleton, Burrows and O'Malley, 2005). Some users expressed suspicion instead of trust in the 'expert' systems (Beck, 2006: 8), and showed less confidence in the government and the medical profession's approach towards electronic cigarettes (Kasperson et al., 1992) (see 6.3). I demonstrated how some users resisted and challenged experts' judgements on the risk of electronic cigarettes (Lupton, 1999: 111; Green, Thompson and Griffiths, 2002: 277). Others trusted the 'experts' and expected institutions to be responsible for safety, regulation and control of electronic cigarettes, while forming their own plans in using electronic cigarettes (Giddens, 1990, 1994; Gregory, Slovic and Flynn, 1996; Zwick, 2002a).

As opposed to other scholars' arguments, the lack of trust and uncertainty between professional systems and electronic cigarette users did not cause 'paralysis and distress' (Lupton, 1997b: 380), or adverse psychological, social, political or economic effects (Putnam, 2001, 2002). Instead, the users showed processes of reflexivity and individualisation (Giddens, 1992: 30, 1999; Beck, 1996). Although Lash (1993) proposed that people's responses to risk can be non-reflexive, the study demonstrated the notion of 'expert reflexivity' (Lupton, 1997b; Fox, Ward and O'Rourke, 2005: 1307), where electronic cigarette users engaged in reflexive health decision-making (Giddens, 1994). Electronic cigarette users

interacted with health professionals around smoking and electronic cigarettes as a 'consumerist' and not as a 'passive patient' (Lupton, 1997b: 373). They calculated risks and made cognitive decisions where they simultaneously contested and adopted expert knowledge systems in planning their electronic cigarette use (Giddens, 1991). They also acknowledged 'the asymmetry of communication', as there were different channels to disseminate information about electronic cigarettes (Zwick, 2002a). They critically reflected on the conflicting available information and discussed the benefits of electronic cigarettes (e.g. health gains and financial savings), and compared them to the threats from smoking (e.g. health implications and social unacceptability). The electronic cigarette users took personal responsibility to minimise the risk of smoking for themselves and others and made the decision to switch to electronic cigarettes (Beck, 1992; Giddens, 1999; Fox, 1999).

Because of the small number of participants, this study did not look into how some sociocultural factors such as gender, age, social class and ethnicity may have contributed to the construction of electronic cigarettes' risk knowledges and experiences (Lash, 1993; Lupton and Tulloch, 2002). However, the data demonstrated the influence of culture on constructing various risk perceptions (Douglas, 1992). Users pointed at the differences in cultures and groups' attitudes towards electronic cigarettes. An example is the user who was happy to use electronic cigarettes around her friends, but was not welcomed to use them around her parents due to cultural views on smoking and addiction, indicating a 'cultural bias' (Langford et al., 2000: 692). Another example is when a user reflected on the culture that stigmatises the addiction behaviour per se.

My data showed how electronic cigarette users were heavily influenced by several cultural and socio-economic factors such as mass media, individual experience and life discourse, local memory, moral principles and personal judgements (Tulloch and Lupton, 2003; Zinn, 2004; Hawke and Rowe, 2008). I demonstrated how *the shared values, concerns and beliefs* about smoking within this South East England study led to accepting the risk of using electronic cigarettes to avoid the risk of smoking (Lupton, 1999: 40). Also, the cultural opposition to the visibility of the habit of smoking has led the advisors to advocate restricting electronic cigarette use. Hence, the gateway and renormalisation risks were treated as a 'real' threat despite the lack of evidence (Zinn, 2009). I also demonstrated how, in the world view of some electronic cigarette users, electronic cigarettes were not

perceived as a hazard, as they were more inclined towards the psychological and social benefits of electronic cigarettes. The health risk of electronic cigarettes was downplayed by some users, who considered them safe, while others were not sure about their safety. However, I showed how electronic cigarette users continued using electronic cigarettes in spite of their different levels of concerns. This is due to the subjective nature of assessing and dealing with risk (Hay et al., 2005). For some, it could be due to the fact that any harm electronic cigarettes may cause was unseen and intangible, or because users engaged voluntarily in electronic cigarettes use and, therefore, they felt that they were in control (Hawkes and Rowe, 2008).

The advisors' risk perceptions showed an active integration of their personal individual experiences with electronic cigarettes. These personal experiences functioned both as an endorsement for electronic cigarette use (e.g. an aid to stop smoking) or a warning (e.g. a gateway to smoking). The advisors drew both on positive and negative accounts of working with electronic cigarette users. Similar to other studies, the effect of personal beliefs influenced the advice offered to clients, which was not always evidence-based (Beard et al., 2012; Lorencatto et al., 2013; Beard et al., 2014). Because of the ambiguity of electronic cigarettes, the advisors were unable to provide conclusive evidence-based information about electronic cigarettes to their clients. This, I believe, may have influenced the relation and trust between the advisors and electronic cigarette users in the Stop Smoking Services I studied.

The above theme draws from the biomedicalization process where there is a focus on risk and a change in the relation between 'expert' and 'lay' people (Clarke et al., 2003). In the next section, I will explain how society's preoccupation with identifying sources of risks, managing those risks and maintaining health have led to electronic cigarettes becoming a tool for empowerment to help smokers manage their nicotine addiction and conform to the social norm construction of health.

7.4. An Electronic Cigarette as a Means for Empowerment

An electronic cigarette, I argue, is a manifestation of the biomedical era which empowers people and emphasises the responsibility of individuals to change their behaviours and lifestyles (Frenk, 1993; Petersen, 1997; Elam, 2015). This is evidenced, in this thesis, through

the stop smoking advisors' routine managements of clients and the electronic cigarette users' decision-making. I will discuss this next.

First, the advisors provided what they called a '*client focused*' approach, where they felt that their role was to empower smokers to stop smoking and, ultimately, stop nicotine use. I demonstrated how some advisors verbalised that their role is to provide advice and guidance to users, who hold the ultimate responsibility for their own health. This approach, I argue, stemmed from the clinical gaze without extending beyond the biomedical elements of the smoker's body (Gardner, 2014: 215). Although the advisors showed understanding of the different personalities, circumstances and wider influences that may hinder smokers' efforts to quit smoking, they followed their target-driven regime (Bauld et al., 2010; DOH, 2011; NCSCT, 2014). The advisors drew upon different elements when dealing with clients; they acknowledged 'heavily addicted' smokers, complicated health issues, mental problems, stress and peer pressure. Some advisors described the methods of treatment they use as a way to empower smokers and incite their willpower as a new skill to acquire and use in other aspects of life. However, in general, the advisors welcomed licensing electronic cigarettes as a medicine to be used in conjunction with other provided treatments. This, therefore, reflects a biomedical model that endorses a reductive clinical gaze, where treatment and pharmacology, focused on individuals, are emphasised rather than prevention (Chapman and MacKenzie, 2010; Cummings et al. 2006; White, Oliff and Bottorff, 2013).

Second, electronic cigarette users showed a strong sense of control and authority. Users spoke about the role of willpower to stop smoking and/or vaping. Electronic cigarette users were strongly motivated to self-manage their smoking and vaping habits, and achieved this by amalgamating medical discourses on smoking and related treatments with their knowledge and experiences of smoking, stop smoking aids and electronic cigarettes. Using electronic cigarettes, similar to other medicinal nicotine forms, to reduce the harm that tobacco use inflicted on smokers' bodies, can be considered 'a struggle for empowerment where the smoker is being given every encouragement to conquer and gain control over their cravings for nicotine' (Elam and Gunnarsson, 2012: 149). Electronic cigarettes can be described as 'technologies of the self' (Foucault, 1988a) to discipline the user's body in relation to systems of thought. The electronic cigarette, I argue, is an

empowerment tool that smokers use to improve their health and conform to the societal norms of being a non-smoker. Further, electronic cigarettes, similar to other nicotine replacement therapies, can be described as ‘advanced liberal technologies of the nicotine addicted self’ that smokers use to transform themselves into ‘more responsible nicotine addicts’ (Elam and Gunnarsson, 2012: 149). Electronic cigarettes can also be perceived as ‘civilizing technologies’ that are used to produce ‘better’ citizens rather than treat physiological illnesses (Vrecko, 2010; Elam and Gunnarsson, 2012: 149).

The representation of electronic cigarettes as a means for empowerment stem from what Clarke et al. (2003: 171) described as ‘Health As Moral Obligation’, where health is viewed as an ‘ongoing moral health transformation’ (p: 172). Electronic cigarettes, as an empowering tool, showed the role of the ‘lay world’ in shaping a scientific or biomedical outcome (Garrety, 1997; Fox, 2011). Consumerisms and lay power have been growing significantly in Western society; hence, they can be considered a key driver for representing electronic cigarettes as a means for empowerment. Electronic cigarette users were accommodated within the Stop Smoking Service, even though electronic cigarettes were not licensed at the time. This proves the power of lay knowledge in medicalising the use of electronic cigarettes, and demonstrates the role of lay people and social movements in actively contributing to the medicalization of a particular problem (Conrad, 2008). It is this that I turn to in my last theme, where I explain how electronic cigarettes have become a means for social change.

7.5. An Electronic Cigarette as a Means for Social Change

Three pathways of change can result from the growth of electronic cigarettes. First, the creation of new identities as a result of using new technologies. Second, the formation of new forms of social links in society. Third, a change of the conception of recreational nicotine use, thus creating a new realm in the field of nicotine addiction. These will be explained next.

The first form of social change is the creation of a new identity for electronic cigarette users. The data showed that the term ‘vaping’ became a widely accepted term for describing the use of electronic cigarettes. The data pointed at the proliferation of vaping shops, groups, cafes and events. Although most of the users in this study were not actively

involved in vapers' groups, one user was interested in online activities as he formed an online forum for vapers. For some users, electronic cigarettes have created new rituals and changed the way they use their hands. I demonstrated how most users were proud of switching to electronic cigarettes, as it made them feel *smarter, happier* and *in control*. Hence, electronic cigarettes represent new technologies that have the ability to create new 'subjectivities' (Clarke et al., 2003: 185). However, the data here showed that the vaper identity was not embraced by all electronic cigarette users, as some of them used electronic cigarettes in a discreet way.

The second social change is the rapid move by private multinational companies and Big Tobacco to acquire, manufacture, market and research electronic cigarettes. This created new links that required new guidance. We saw the new guidelines presented to health services on the best way to deal with electronic cigarette manufacturers who are part of the tobacco industry (ASH, 2015d, e) (see 1.4.4). This development reflects what Clarke et al. (2003: 185) described as the creation of 'complex intersectionalities of culture, political economy, organization, and techno-science', where new actors are created and new linkages are produced by government agencies and private industry (Clarke et al., 2003). However, the resemblance of electronic cigarettes to cigarettes, their use as an alternative to smoking and the history of the tobacco industry in misleading the public opinion about the harm of smoking, all played a role in shaping perceptions of the tobacco industry's intentions. So, even though new links with the industry are being formed slowly and cautiously, it is still unclear how these links will progress and what will unfold in the future.

The third, and the most prominent, social change is the acceptance of a new practice for consuming nicotine that mimics smoking. In Chapter 1, I introduced the classifications of 'good' nicotine and 'bad' nicotine and pointed at the mainstream tobacco control efforts to eliminate the visibility of the smoking behaviour (Bell and Keane, 2012) and all kinds of nicotine use (Elam and Gunnarsson, 2012). I explained how public health programmes focus on abrupt smoking cessation with a view to stopping nicotine use (DOH, 2011). I also discussed the moves towards harm reduction measures, such as gradual smoking cessation and long-term use of nicotine-containing products (DH, 2011; NICE, 2012a, b; 2013a, b). However, these measures are not, yet, translated into practice within Stop Smoking Services in South East England. I also demonstrated how this nicotine distinction is threatened by the

emergence of the electronic cigarette as a product that mimics smoking, contains *pharmaceutical-grade nicotine* and is used both therapeutically and recreationally (WHO, FCTC, 2012b; Bell and Keane, 2012: 245, 246; de Andrade, Hastings and Angus, 2013). Data from this research provides some evidence that electronic cigarettes have become a socially acceptable habit. Electronic cigarette users revealed using and enjoying electronic cigarettes in social occasions. They spoke about the endorsement and encouragement they get from others for switching to electronic cigarettes. Some were vocal about their right to vape as long as there was no proven harm to others. However, the concern about stigma was also demonstrated, as I discussed earlier. The advisors viewed electronic cigarettes as a socially acceptable habit, especially when compared to traditional smoking, and they mostly approved the use of electronic cigarettes over smoking. However, they disapproved of the resemblance of electronic cigarettes to smoking and favoured medicinal regulations to electronic cigarettes to avoid recreational use.

My data support the literature in acknowledging the growth of using electronic cigarettes successfully to quit smoking by replacing tobacco cigarettes with electronic cigarettes (RCP, 2016). This growth has paved the way for the new regulations in the UK. These regulations, which came into effect from May 2016 (ASH, 2016a) (see 1.4.2), allow for both recreational and medicinal status of electronic cigarettes to coexist. These regulations are important changes in the history of tobacco control in the UK. They indicate the acceptance of electronic cigarettes as harm reduction products by UK regulators; they also indicate a move towards accepting the non-medical/recreational use of a device that resembles smoking and contains nicotine.

Regulations are considered an important factor in the creation of social acceptability. In their study, Sherratt et al. (2015a: 9) suggested that regulating electronic cigarettes may be viewed as a social endorsement of electronic cigarettes for some participants, who felt uncertain or concerned about electronic cigarettes' safety. Lessig (1995: 1030) argued that the anti-smoking regulations that were introduced after the publishing of the US Surgeon General's Report in 1964 had stemmed from the '*social meaning of science*', which proved that smoking is harmful. These regulations, Lessig believed, had stimulated the '*cultural redefinition of smoking*', so smoking became socially unacceptable. I argue that, half a century on, we could be seeing a sign of a cultural redefinition of addiction, again stemming

from the *social meaning of science*, which suggests that nicotine is not harmful. This *redefinition* may create a new social milieu and legal climate in which electronic cigarettes become more acceptable and more accessible, hence forming a new social norm (Zhang, Cowling and Tang, 2010).

The electronic cigarette is described as a device that ‘meets many of the criteria for an ideal tobacco harm-reduction product’ (RCP: 2016: 63). Hence, electronic cigarettes may produce a new realm where consuming nicotine, in a form that resembles smoking, can coexist with public health agenda and their historical stance, which has been comprehensively against the visibility of any smoking-like behaviour, and is sceptical about coinciding pleasure with health (Bell and Keane, 2012: 245, 246; de Andrade, Hastings and Angus, 2013). Consequently, this means not only normalising nicotine use, but also normalising the act of using nicotine in a smoking-like behaviour. Electronic cigarettes, I argue, resulted in problematising cigarettes rather than nicotine. It is no longer nicotine addiction that is a cause for concern, but it is the addiction to tobacco smoking. It is within this context that I see how electronic cigarettes have transformed our understanding of addiction. Electronic cigarettes function as a tool to change the population level nicotine-related behaviours; thus forming a new social norm towards a recreational use of nicotine.

7.6. Linking Biomedicalization and Boundary Objects Theories

7.6.1. Electronic Cigarettes and Biomedicalization

Here, I examine the emergence of electronic cigarettes within the context of the biomedicalization of smoking addiction, which resulted in legitimising the use of medical discourses and treatments to treat a lifestyle condition (Elam, 2015). It is important not to look at electronic cigarettes as a biomedical invention that appeared like a miracle to treat smoking. We need to historically understand electronic cigarettes’ emergence and recognise that their growth is a trajectory for biomedicalized developments within the scientific and cultural knowledge about smoking and nicotine addiction.

Both processes, medicalization and biomedicalization, can be detected when examining the development of electronic cigarettes. Medicalization worked through the professional jurisdiction over smoking, and the pathologisation of what was seen previously a habit. The success of electronic cigarettes relied on the efforts, discourses and

organisational work that existed before the emergence of this new technology. Hence, the electronic cigarette was embraced by leading organisations and scholars who were advocating for harm reduction in the decades that preceded the production of electronic cigarettes. Perhaps more important than the developments of the scientific evidence of nicotine addiction and the biomedicalization of addiction, is the ability to transform the biomedical knowledge of harm reduction to a product.

The efforts of public health personnel, researchers and scientific studies contributed to the science of electronic cigarettes. They also contributed to creating new social and cultural environments. These developments made the electronic cigarette a legitimate and credible consumer and medical product that smokers can use to overcome their smoking habit. The promotion of medications to treat smoking, including electronic cigarettes, legitimates smoking as a biomedical condition. However, while, with nicotine replacement therapies, there is a departure from the psychological and habitual associations with smoking, with electronic cigarettes there is a recognition of the importance of these associations. The electronic cigarette has played a key role in changing the equation between smoking and nicotine. It facilitated the reconstruction of nicotine as not a dangerous product. At the same time, it confirmed the importance of psychological, social and habitual elements of smoking. Hence, it is a product of the biomedical knowledge of addiction, as it confirms that addiction involves physiological, social and psychological elements. It is this association, however, that created dilemmatic situations and the concern about stigma. Also, what we see here are elements of the demedicalization of nicotine addiction (not a disease that needs a treatment in itself), but simultaneously a continuation of biomedicalizing smoking.

Further, the relationship between the electronic cigarette users and 'expertise' can be understood to be 'simultaneously empowering and disempowering, embrative of and resistant to medicalization' (Counts, 2011: v). The attitudes of both the electronic cigarette users and the advisors towards electronic cigarettes seem to reflect a convergence of professional expertise, grounded in the medical model of disease, and a patient/lay/user expertise based on subjective experiences of health and illness. On the one hand, electronic cigarette users' perspectives on electronic cigarettes, smoking and nicotine were mediated via a biomedical model of addiction (Lupton, 1999; Fox, Ward and O'Rourke, 2005), and

‘expert’ knowledge as part of a risk-avoidance practice and self-care (Beck, 1992a; Giddens, 1991; Armstrong, 1995). On the other hand, there was a disconnection between ‘lay’ electronic cigarette users and the professionals on the risk issue. Most electronic cigarette users saw their use of electronic cigarettes as a means to restore their own health to a normative construct of health, to ensure the health of others around them is maintained or restored, and to conform to the social norm of not being a smoker or a nicotine user. Although they sought professional advice, this advice was filtered through the lens of their personal experience and own perceptions.

Electronic cigarettes denote the hybrid generated through science and technology (Clarke et al., 2003: 173). Biomedicalization, in the case of electronic cigarettes, orbits around the interaction of these biomedicalization processes: the emphasis on improved lifestyle by applying biomedical innovations; focus on risk factors rather than on the diseases itself; the creation of new subjectivities through electronic cigarette use; the creation of a new community through online and face to face groups, shops and cafes; the development of a new market for customised products; new techniques for disseminating information about electronic cigarettes; and the new links created as a result of accepting electronic cigarettes as a tool of harm reduction within the health and political arena. These processes interact with and co-constitute each other. However, it has been argued that ‘Within processes of biomedicalization, social contexts are often obscured in understanding of health and illness as technoscientific definitions come to prevail’ (Fosket, 2010: 349). This is where I saw the usefulness of combining the theory of boundary objects with biomedicalization in studying the phenomenon of electronic cigarettes, as I explain next.

7.6.2. Electronic Cigarettes as Boundary Objects

Here, I discuss how electronic cigarettes as boundary objects can function as both translational and facilitative objects between different actors, who construct different social meanings of electronic cigarettes.

In Chapter 1, I discussed how the emergence of electronic cigarettes has created controversy regarding their role and effect on society (WHO FCTC, 2012b; RCP, 2016), and I showed a similar controversy within my data. The ambiguity of electronic cigarettes allowed for allocating different meanings to the device. The electronic cigarette was represented as

a safe product; a safer alternative to smoking; a therapeutic product; a clean nicotine delivery device; an innovation with potential long-term threats; and as a risky object. It was also seen as a device that can create addiction, maintain nicotine addiction, a gateway to smoking and a gateway from smoking simultaneously. I demonstrated how, within the same group, different meanings and perceptions existed; hence, I argue that the coexistence of these different risk meanings and perceptions enabled the formation of electronic cigarettes as boundary objects (Star and Griesemer, 1989).

Electronic cigarettes also function as translational boundary objects. This is because electronic cigarettes allowed for heterogeneity and cooperation between different actors (Star and Griesemer, 1989). The electronic cigarette was adapted to the multiple social worlds of the electronic cigarette users, stop smoking advisors, health organisations and the tobacco industry. Hence, it created coherency and cooperation between groups with diverse interests and goals. We saw how different actors, who held different perceptions of electronic cigarettes' safety, efficacy and status, shared the understanding that electronic cigarettes are less harmful than smoking and could replace cigarettes. This shared understanding enabled groups to communicate and cooperate together. Electronic cigarettes, which exposed the boundaries between 'good' and 'bad' nicotine (Bell and Keane, 2012: 246), act as a bridge between the two worlds of 'bad' and 'good' nicotine. Electronic cigarettes created a new identity for nicotine, where both 'bad' and 'good' nicotine became entangled.

By seeing electronic cigarettes as boundary objects, the negotiation over the possibility of using electronic cigarettes therapeutically and recreationally emerged. By negotiating electronic cigarettes as boundary objects, different actors could each retain their own interpretation. As a result, a consensus on the role of electronic cigarettes could be achieved given that, as boundary objects, electronic cigarettes could be conceptualised in multiple ways. The regulatory framework which allows electronic cigarettes to exist, both recreationally and therapeutically, represents what Star described as 'the material/organizational structure of different types of boundary objects' (Star, 2010: 602), where the heterogeneity is maintained without ruining the cooperative work. The electronic cigarette is shifting from being a vague identity boundary object to becoming a more specific and tailored to local use object (p: 605).

Electronic cigarettes also function as facilitative boundary objects (Fox, 2011). In the literature review, I demonstrated the tensions between scientists over the harm reduction approach, especially the long-term use of nicotine (RCP, 2007; Elam and Gunnarsson, 2012). Contemporary tobacco harm reduction efforts can be traced back to the 1950s (Doll, 2004). However, I demonstrated how the disagreement related to tobacco harm reduction still exists in the current official domain and among stop smoking advisors. Electronic cigarettes have prompted the debate of harm reduction. They brought to the surface the discussions of providing an acceptable and effective form of nicotine as a cigarette substitute (RCP, 2007), which were initiated back in the early 1990s (Russell, 1991). Electronic cigarettes have stimulated the debate on the Stop Smoking Services' agenda and whether they are stop smoking or stop nicotine services (NCSCT, 2016: 11). Electronic cigarettes, I argue, facilitated the emergence of new UK regulations which accept practices of harm reduction. Electronic cigarettes have transformed 'the nicotine harm-reduction landscape' (RCP, 2016: 7), thus paving the way for a change in our society and a new realm in the field of nicotine addiction.

An implication of the production of electronic cigarettes as boundary objects is that, while a coexistence for diverse representations is agreed upon, this does not mean that the debate has been settled. Conceptualising electronic cigarettes as boundary objects means that divergent interpretations are dynamic and changeable. We saw how the dilemma still exists with regards to promoting electronic cigarettes to help smokers stop smoking, and controlling electronic cigarettes to discourage their increased uptake or renormalisation of smoking. Accordingly, further development in the field of electronic cigarettes might create new interpretations for electronic cigarettes, change or end some of the meanings and perceptions presented in this thesis.

7.6.3. How Are Both Theories Interlinked?

I would like to explain how boundary objects theory links to biomedicalization. I describe how the ambiguous electronic cigarettes can function as boundary objects and progress into a standard, or a process, and facilitate the formation of new social forms. This will contribute to the understanding of the construction and development of biomedicalization processes in society. At the same time, I describe how biomedicalization processes provide

the wider political, cultural and technological contextual influences that can explain the formation of boundary objects.

In section (3.2.2), I introduced Clarke et al.'s (2003: 185) statement, where they described the emergence of 'new forms of agency, empowerment, confusion, resistance, responsibility, docility, subjugation, citizenship, subjectivity, and morality', and where he highlighted the 'infinite new sites of negotiation, percolations of power, alleviations as well as instigations of suffering, and the emergence of heretofore subjugated knowledges and new social and cultural forms'. This statement highlights the vital role of the social context of the development of biomedicalization processes. It identifies the central role of human agents in the construction, resistance or dominance of biomedicalization processes and describes how new technologies become a means for creating new social and cultural forms. The statement describes how different people interact differently with biomedical advances. First, biomedical technologies create new social worlds with a new 'agency, empowerment, confusion, resistance, responsibility, docility, subjugation, citizenship, subjectivity, and morality'. Second, people start processes of negotiating their conflict, stances, and various perspectives. Lastly, new social and cultural forms emerge. The authors called for case studies to examine 'the heterogeneities of biomedicalization practices and effects in different lived situations' (p: 185). This is where boundary objects theory can be useful in elucidating the ambiguities, conflicts and processes of negotiations that come with biomedicalization. Clarke and Star (2008: 137) stated that:

the study of boundary objects can be an important pathway into complicated situations, allowing the analyst to study the different participants through their distinctive relations with and discourses about the specific boundary object in question. This can help frame the broader situation of inquiry as well.

Boundary objects theory can explain how different biomedical processes are the outcome of complex social negotiations and cooperation between divergent social meanings occurring within a particular social, economic and political context.

First, my data demonstrated the focus and preoccupation of my participants on risk, risk management and individual responsibility to improve health. It is this human force that engendered and augmented the processes of 'intensifying foci on health itself' and a 'move

towards customization and individualization' and consumerisms (Clarke et al., 2003). My data showed how representations and discussions of electronic cigarettes stemmed from the biomedical model understanding of nicotine and addiction. The engagement with scientific information and personal experiences facilitated the rise of the concept and practices of nicotine harm reduction. As boundary objects, electronic cigarettes showed the role of the 'lay world' in shaping a scientific or biomedical outcome (Garrety, 1997; Fox, 2011). Electronic cigarettes progressed into a process of harm reduction and facilitated the formation of new social forms for using nicotine. Electronic cigarettes as boundary objects functioned as an entity that enhanced the capacity of harm reduction to translate across culturally defined boundaries (Fox, 2011). With the view that harm reduction represents an extension for the 'medical gaze' (Petersen and Lupton, 1996: ix; Miller, 2001: 171), we can see how the formation of electronic cigarettes as boundary objects enhanced biomedicalization.

Second, electronic cigarettes, as ambiguous boundary objects with diverse meanings, have created confusion and uncertainty and, consequently, have generated new groups of advocates and opponents. These groups initiated processes of debates and negotiations. Biomedicalization processes are the outcome of battling different forms and human interpretations. These voices, I believe, are the human force that influences processes of 'transformations of identities, through the creation of new identities by using new technology', and 'the transformations of information and the production and distribution of knowledges' (Clarke et al., 2003). Electronic cigarettes allowed for a form of nicotine to exist without implying 'rejection of smoking or a commitment to quitting' (RCP, 2016: 101). Electronic cigarettes, as technological objects, possess the ability to mediate social and power relations (Fox 2011: 82), thus creating new social identities with new social links and forwarding social transformation, as I explain next.

Third, the mismatches between the overlapping meanings and perceptions of electronic cigarettes across the different groups caused dilemmatic situations and 'problems for negotiation' (Star and Griesemer, 1989: 412). Hence, the management of electronic cigarettes is a key process in developing and maintaining coherence across these intersecting social worlds (p: 393). Bauer and Gaskel (2008: 349) argue that the challenge in the modern era 'is not "how to achieve consensus" but rather how to manage technological

developments in the context of diverse values and differing representations'. The new electronic cigarettes regulations and the new management of links with the tobacco industry aim to maintain coherence and successful negotiations between the different groups, without necessarily creating consensus, and to maintain their sharply different organisational missions (Star and Griesemer, 1989: 413). The new regulations, therefore, reflect the successful formation of electronic cigarettes as translational boundary objects by enabling people from multiple social worlds and different conceptions, of nicotine, smoking and electronic cigarettes, to cooperate. Thus, they enforce the process of 'the political economic reconstitution of the vast sector of biomedicine' (Clarke et al., 2003).

In this qualitative study, the boundary objects theory presents a useful tool that helped me to understand how the different social worlds come together to collaborate, despite the differences in their expertise, goals, and interests, with regards to electronic cigarette use, hence enforcing processes of biomedicalizing smoking addiction in our society. Simultaneously, I believe that the construction of different social meanings is influenced by the domination of the biomedical model. Clarke et al. (2003: 171) pointed to this simultaneous link when they described the substantial and constant 'politico-economic transformations of the biomedical sector'. These transformations, they argued, are happening on a 'macro structural' level across organisations and a 'meso- and micro-level' in health and medicine practices. The scholars saw such transformations as a means 'to produce new and elaborated mechanisms through which biomedicalization can occur', but at the same time, they believed biomedicalization determines and stimulates many of these political and economic transformations in our society.

In this sense, biomedicalization processes can influence the construction of different social meanings and formation of boundary objects. They are the engines that can encapsulate the different perceptions that different social worlds form of a particular biomedical technoscientific object. In the case of electronic cigarettes, for example, the previously formed science of nicotine addiction and harm reduction provided the background from where the different interpretations of electronic cigarettes stemmed. Also, the advances in the transformation of knowledge mechanisms facilitated the formation of shared understanding and negotiating boundaries between different actors. Electronic cigarettes, I argue, encapsulate the broader social meaning of harm reduction, nicotine addiction,

contemporary public health and the underlying social relations that surround their development and adoption (Fox, 2011: 82).

To conclude, the three emerged themes from this study showed that an electronic cigarette was viewed as a potential source of different risks, a means to empower smokers, a technology that creates new identities, new links in society and a new realm in the field of addiction. I demonstrated how the ways in which different actors interpreted, perceived and managed electronic cigarettes influenced the development of several biomedicalization processes. Biomedicalization, I conclude, is a dynamic rather than static concept, as its processes are constructed around a constant (re) formation of boundary objects. Next, I will discuss the limitations and strengths of this project.

7.7. Strengths and Limitations

My research, similar to any research project, has strengths, weaknesses, constraints and opportunities which I could not anticipate at the outset. Below, I demonstrate the particular strengths and limitations of my study in terms of the research context and the theoretical underpinning of my work.

Bryman (2012: 405) highlighted some of the criticisms that qualitative studies have been subjected to. For example, qualitative research was criticised for being subjective. This is because researchers develop a close connection with their participants, and because the researcher's own views, judgement, preferences, characteristics, and background may influence the procedures and progressions of the study. I am aware that my own background, experience and knowledge shaped my interpretation; however, my intention was to make sense of and interpret the meanings participants have about electronic cigarettes. Hence, I applied verbatim quotations for interview transcripts to give participants a voice and to illustrate and deepen the understanding of the themes I identified (Corden and Sainsbury, 2006).

There are some methodological issues relating to interviews as a data collection method. Diefenbach provided a summary of the methodological problems of qualitative research that is mainly based on semi-structured interviews. This includes, for example, the process of selecting the interviewees; the influence of the interview situation; the possibility of unconscious bias or conscious attempt to mislead the interviewer by the interviewee.

Further, there are concerns with regard to the quality of the data, their quantity and the time frame, which all affect the validity of the data (Diefenbach, 2009). I argue that the interview method I used had enabled individuals to have their knowledge and voices heard. However, recruiting was challenging because it depended on people's willingness to take part in a project and on the structure of their lives and lifestyles. While, I believe, participants were generally comfortable being interviewed by me, the structure and formality of an ethically conducted research project may have influenced their active participation in the project, and may have contributed to the difficulties encountered in generating participations to conduct interviews.

One possible limitation of this study would be the potential of sampling bias, as only people who could be contacted by mobile phone (at the second site of the research), had access to the participating Stop Smoking Services, used social media and visited places that advertised my leaflets knew about the research. Also, people with a hearing impairment, or who might find it difficult to converse in English might have been put off from participating in telephone interviews. Nevertheless, the process of recruiting participants offered an opportunity for different electronic cigarette users to participate in the research, regardless of their gender, job status and age. This, I believe, added more heterogeneity to the debate. A further potential limitation is the use of two different interview methods: face to face and phone interviews. Since the themes that emerged from both methods were very similar, I have some confidence that there was a high degree of thematic commonality provided via both approaches. The resultant themes were drawn from the raw data (inductive), thus presenting naturalistically occurring themes evident in the data itself. I also offered to do interviews at the convenience of the interviewees to achieve a more relaxed atmosphere.

My research design was purposely a small qualitative study focusing on the perceptions of electronic cigarettes in South East England. This design allowed me to gain a deep understanding of the perceptions of electronic cigarettes drawn from the two datasets. I also want to highlight the benefits of triangulating two data sources to look for corroborating or conflicting data and to understand whether the data point to the same direction and, hence, to improve the data quality (Williams and Morrow, 2009; Yin, 2011). Through triangulation, I was able to grasp the ambiguity of electronic cigarettes and the challenge this posed to health practitioners.

Another limitation is not looking into how different sociocultural factors such as gender, age, social class and ethnicity may have contributed to the construction of the different perceptions of electronic cigarettes. The study did not look into how the use of different 'generations' of electronic cigarettes, brands, models, flavours or nicotine concentrations might have contributed to the formation of different perceptions that electronic cigarettes users or the advisors hold. This qualitative study would have been improved by incorporating observations in the data collection in order to ensure a thick description of the perceptions elicited. In addition, there is still a scope for further research on electronic cigarette users' concern about stigma, which has been brought up in my research.

7.8. Further Research

Here, I suggest further research, which partly stems from the limitations of my study, as demonstrated above, and partly from the new ideas generated by the empirical, theoretical and methodological levels through my research. I suggest that, by using different methods, by interviewing a different group of participants, and approaching electronic cigarettes from a different perspective may add further insights into the debate on electronic cigarettes.

In 'commodified biomedical economies' (Hansen and Roberts, 2012: 98), we need to consider the power of consumerism, big corporates and Big Tobacco in the field of electronic cigarettes. Although not extensively debated in this study, my participants pointed at the link between the government, science and the pharmaceutical and tobacco industries. More studies are needed to reveal these links and their influence on electronic cigarette use in societies.

Based on the difficulties encountered when recruiting electronic cigarette users to participate in the research, I suggest applying alternative research methods when conducting research with this population. Using social media, such as forums and online discussion groups, would be valuable in order to allow views from electronic cigarette users with a wider range of experiences than were potentially included in my sample. A further qualitative approach, to understanding the construction and effects of different perceptions of electronic cigarettes, may benefit from a comparative study of different locations. These locations could be differentiated by studying some locations which were subject to

particular interventions, such as the prescriptions of electronic cigarettes as a treatment in some Stop Smoking Services. Different theoretical approaches can be utilised to further explore the phenomenon of electronic cigarettes, such as the Social Representations Theory (Moscovici and Duveen, 2008 [1961]). The theory has been proposed as a plausible mechanism to explain how boundaries develop and are negotiated among groups (Riesch, 2010). Other studies may apply the same theoretical approach that I applied here, to explore other emerging technologies.

I also suggest studies that look more closely at the construction and influence of stigma towards electronic cigarette users. With regard to participants, I argue that it would be valuable in future research to compare the views of health and non-health service providers in order to gain an understanding of how all services can be more electronic cigarette user-friendly. It would be valuable to conduct future research into the different perceptions of electronic cigarettes held by family members of electronic cigarette users and the general public. A further participant group, which has not received adequate attention, include electronic cigarette users who chose to go back to smoking after stopping smoking with the help of electronic cigarettes. It would also be useful to focus on special cohorts, such as smokers with mental illness or serious health conditions and those from disadvantaged groups to establish the usefulness and uniqueness of electronic cigarettes in meeting their needs. Other studies could explore the use of different 'generations' of electronic cigarettes, brands, models, flavours and nicotine concentrations, and how these differences might be linked to perceptions and use patterns of electronic cigarettes. I suggest conducting further research looking into how different sociocultural factors such as gender, age, social class and ethnicity influence the construction of the different perceptions of electronic cigarettes. Longitudinally, it would also be valuable to study the social outcomes for the long-term use of electronic cigarettes. Lastly, I suggest studies that looks into the implications of the new electronic cigarettes' regulation, especially addressing the uptake, gateway and renormalisation concerns. In general, as discussed earlier, I recommend incorporating observation in the research design. Next, I provide some recommendations to suggest how my findings can be translated into actionable approaches by policy and practice.

7.9. Recommendations

In this section, I discuss the recommendations to policy and practice drawn from the findings from this qualitative study in order to achieve positive outcomes for smokers and electronic cigarette users.

First, my findings suggest that concern about stigma exists among some electronic cigarette users in my sample. These findings highlight the importance of conducting in-depth case studies, as my research adds to the small body of literature outlining early experiences of electronic cigarettes. In the face of stigma, policies, news and messages circulating in the public sphere, particularly the media, ought to address the negative conceptions of electronic cigarettes. The formulation and communication of electronic cigarettes' discourses must take into account not just the risks, but also the benefits that come from electronic cigarettes. This is particularly so with regard to electronic cigarette users, who struggle with their tobacco addiction and who may find electronic cigarettes a lifesaving opportunity.

Second, based on interviews with stop smoking advisors, it became apparent that the advisors felt under pressure to meet quitting targets. It also became apparent that the approaches applied in the Stop Smoking Services do not coincide with the harm reduction messages advocated by the leading health organisations like NICE and RCP. The provision of supportive services that focus on smokers' choices and lifestyle, and build trust between lay knowledge and professional knowledge, can create a positive environment for smokers who need help in their attempts to quit. I emphasise the benefits in addressing (and accepting) smokers' life choices rather than suggesting a normative life trajectory for them. I stress the need to take a proper account of both the personal and physical experience of using electronic cigarettes and the cultural and social dimensions. I argued that *electronic cigarettes signify a historical cultural redefinition of addiction, stemming from the social meaning of science*, where psychological, physical and lifestyle requirements of smokers are recognised and acted upon. This social change, however, can be interrupted if stigma towards electronic cigarettes was shifted from smoking. However, building on the new regulations of electronic cigarettes and the growth of their use as a harm reduction tool, some social change could already be observed within Stop Smoking Services. Because I

come from a positivist background, this study has helped me to understand and value the importance of qualitative research in the field of health, science and technology. My view is that personal experiences should not be considered anecdotal or unreliable in relation to forming a basis for making scientific decisions. On the contrary, these experiences can be so powerful and can change clinical practice as well incite social changes. Hence, I am now a strong advocate for qualitative research to be part of studying any new scientific, health or medical phenomenon. Next, I conclude the thesis by highlighting the novel contribution of my qualitative study to the literature.

7.10. Novel Contribution

In this section, I discuss the contributions of my qualitative study to the empirical, theoretical and methodological literature. I argue that my contribution adds further evidence to the limited knowledge of the experiences of electronic cigarette users. In addition, I contribute to the evidence of stop smoking advisors' experiences, their ways of making sense of electronic cigarettes, and working with electronic cigarette users before electronic cigarettes become a licensed medicinal product. My theoretical and methodological contributions are based on my use of a qualitative research design, underpinned by the theoretical framework of boundary objects and biomedicalization. Finally, my thesis helps to reveal areas in which further research needs to be undertaken, to better understand and find ways to address the possible stigmatising of electronic cigarette users, and further understand the implication of the social change that electronic cigarettes have instigated.

My empirical contribution lies in the finding that the perception of electronic cigarettes as an ambiguous device is shared among my sample of electronic cigarette users and stop smoking advisors. Although electronic cigarette users and the advisors shared this perception, they all drew on different, older experiences in their social memory to construct either a positive or a negative view of electronic cigarettes. These perceptions stemmed from a biomedical understanding of nicotine, smoking and addiction. Hence, electronic cigarettes are represented as 'civilised technologies' to improve health. There is also a consensus on the relative safety of electronic cigarettes in comparison with traditional cigarettes among the two data sources. My findings also suggest that embracing harm

reduction approaches paved the way for new regulations which accept the use of nicotine in a form that mimics smoking, both recreationally and therapeutically. Electronic cigarettes, I conclude, *signify a historical cultural redefinition of addiction*, stemming from the *social meaning of science*, where the smokers' psychological, physical and lifestyle requirements are recognised and acted upon. However, in spite of the signs of social change and acceptance of electronic cigarette use in society, my findings highlight that the *concern about stigma* shifting from smoking to vaping exists. This will have implications on the way public health policies are constructed and communicated.

There has been a call in the academic literature to use 'a theory of social meanings' to address problems of technology innovation and adoption (Fox, 2011: 82). My theoretical and methodological contributions are based on my use of the theoretical framework of boundary objects and biomedicalization theories. In my theoretical approach, I used boundary objects to understand the boundary struggle and the negotiations over competing meanings, which eventually results in the construction of knowledge and policies in relation to electronic cigarettes. Although boundary objects theory was combined with other theories and analytic frameworks (e.g. Garrety, 1997; Fox, 2011), this is the first study, to my knowledge, that combines both boundary objects theory and biomedicalization. I used the biomedicalization theory to illustrate how wider political, cultural and technological processes have influenced the formation of different and competing interpretations of electronic cigarettes and facilitated the construction of electronic cigarettes as boundary objects. I also argued that the coexistence of different social worlds, which was enabled by the formation of electronic cigarettes as boundary objects, has influenced the formation, direction and progression of various biomedical processes. Applying both theories to the topic of electronic cigarettes provided a better understanding and a deeper insight into the contextual factors which influence the formation of various meanings for a technological object among different social worlds; they also provided a better understanding of how these social worlds interact and how they form a power, which, in turn, influence these contextual factors. These intertwined dynamics were captured by applying both the boundary objects and biomedicalization. Hence, I believe, combining both theories was useful to gain a deeper understanding of the emergence and development of electronic cigarettes within my sample.

I will bring my conclusions to a close with some final thoughts on how my preconceived perceptions about nicotine addiction, smoking and electronic cigarettes, which were influenced by a biomedical model of learning have transformed. As the study progressed and throughout my interviews and analysis, I developed an understanding of these concepts through the eyes of the human actors and their spoken and written accounts. I have come to acknowledge the ways in which smokers have a central role in the advances in the field of nicotine addiction, but are also obscured. I would like to see a shift within the medical field towards a broader understanding of the social context of science.

In the four years that I have been researching electronic cigarettes there has been a flowering of academic studies of this domain. As I write the last few sentences of my thesis the world is significantly different. For instance, I now frequently pass adverts for electronic cigarettes, a plethora of new Vaping retail outlets has emerged, and I constantly see the smoke drifting above the head of this new and growing social group of Vapers. My thesis makes an important contribution to understanding this topic, but it is an ever changing field, and much social research still needs to be done.

Appendices

Appendix 1: Approvals to conduct the research

Notification of Approval from NRES Research Ethics Committee

Notification of Approval for major amendments from NRES Committee

School Of Social Science Research Ethics Checklist: Sociology and Communications/ Amendments for the first site (Hertfordshire)

School Of Social Science Research Ethics Checklist: Sociology and Communications/ New proposal for new site (East Sussex)

Statement Of Sponsorship from Director of Public Health and Lifestyle Services in East Sussex

School Of Social Science Research Ethics Checklist: Sociology and Communications/ Amendments to advertise at Brunel website

Appendix 2: Sample of invitation letters and information sheets

Invitation letter to stop smoking advisors at the stop smoking clinics in Hertfordshire

Invitation letter to electronic cigarette users at the stop smoking clinics in Hertfordshire

Information sheet for electronic cigarette users

Information sheet for stop smoking advisors

Appendix 3: Sample of Consent forms

Consent Form for electronic cigarette users

Consent Form for stop smoking advisors

Appendix 4: Interview guide

Appendix 5: The number of all interviews that were included in the analysis

Appendix 6: A full list of interviews conducted with stop smoking advisors

Appendix 7: A full list of interviews conducted with electronic cigarette users

Appendix 9: An illustration of the process of coding from the two sets of data inductively

Appendix 1: Approvals to conduct the research



Social Care REC

An NRES Research Ethics Committee

12 February 2014

Mrs Nancy Tamimi
PhD candidate
School of Social Sciences
Brunel University
Uxbridge
UB8 3PH

Dear Mrs Tamimi

Study title: ELECTRONIC CIGARETTES USE AT SMOKING
CESSATION SERVICE IN UK : USERS AND STAFF
PERSPECTIVES
REC reference: 14/IEC08/0001
IRAS project ID: 142512

Thank you for your emails of 07 and 11 February 2014. I can confirm the Social Care REC has received the documents listed below and that these comply with the approval conditions detailed in our letter dated 20 January 2014

Documents received

The documents received were as follows:

Document	Version	Date
Covering Letter		11 February 2014
Covering Letter		07 February 2014
Other: Practice Manager Introduction Letter	U:091	
Other: Electronic Cigarette User Invitation Letter	U:081	
Other: Smoking Cessation Advisor Invitation Letter	U:071	
Other: Brunel University Health & Safety Procedure on Lone Working - Academic, Research and Support Personnel		01 December 2010
Participant Consent Form: Electronic Cigarette User	U:011	
Participant Consent Form: Smoking Cessation Advisor	U:021	
Participant Information Sheet: Interview (Smoking Cessation Advisor)	U:061	
Participant Information Sheet: Interview (Electronic Cigarette User)	U:051	

206 Marylebone Road, London, NW1 6AQ
Tel 0207 535 0900 Fax 020 7535 0901 www.scie.org.uk
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Approved documents

The final list of approved documentation for the study is therefore as follows:

<i>Document</i>	<i>Version</i>	<i>Date</i>
Covering Letter		18 December 2013
Covering Letter		11 February 2014
Covering Letter		07 February 2014
Evidence of insurance or indemnity		01 August 2013
Investigator CV	Mrs Nancy Tamimi	26 November 2013
Letter from Sponsor		28 November 2013
Letter from Sponsor		20 December 2013
Other: CV for Professor Steven Wainwright Academic Supervisor		29 November 2013
Other: CV for Professor Clare Williams Academic Supervisor		01 July 2013
Other: Letter from Hertfordshire Council		19 November 2013
Other: Practice Manager Introduction Letter	U:091	
Other: Electronic Cigarette User Invitation Letter	U:081	
Other: Smoking Cessation Advisor Invitation Letter	U:071	
Other: Brunel University Health & Safety Procedure on Lone Working - Academic, Research and Support Personnel		01 December 2010
Participant Consent Form: Electronic Cigarette User	U:011	
Participant Consent Form: Smoking Cessation Advisor	U:021	
Participant Information Sheet: Interview (Smoking Cessation Advisor)	U:061	
Participant Information Sheet: Interview (Electronic Cigarette User)	U:051	
Protocol	003	26 November 2013
REC application	142512/5362 76/27/374	05 December 2013

You should ensure that the sponsor has a copy of the final documentation for the study. It is the sponsor's responsibility to ensure that the documentation is made available to R&D offices at all participating sites.

14/IEC08/0001

Please quote this number on all correspondence

Yours sincerely



Barbara Cuddon
Social Care Research Ethics Committee Co-ordinator
Direct Line: 020 7535 0905
Barbara.Cuddon@scie.org.uk

Social Care REC Website: www.screc.org.uk

Copy to: *Professor Steven Wainwright, School of Social Sciences, Brunel
University, Uxbridge UB8 3PH*



Social Care REC

An NRES Research Ethics Committee

23 October 2014

Mrs Nancy Tamimi
PhD Candidate
School of Social Sciences
Brunel University
Uxbridge
UB8 3PH

Dear Mrs Tamimi

Study title:	ELECTRONIC CIGARETTES USE AT SMOKING CESSATION SERVICE IN UK: USERS AND STAFF PERSPECTIVES
REC reference:	14/IEC08/0001
Amendment number:	AM01
Amendment date:	14 October 2014
IRAS project ID:	142512
Ethical Decision:	Favourable

The following amendment was reviewed by the Sub-Committee during the week commencing 20 October 2014.

Details of the amendment

An additional way to ask for participation of Electronic Cigarette (EC) users in Hertfordshire:

- Use the social media on the internet to advertise for the research and ask for voluntary participation. Social media will include: Facebook, electronic cigarettes' forums, twitter and any online websites which could be of interest to EC users.

Ethical opinion

The members of the Committee taking part in the review gave a favourable ethical opinion of the amendment on the basis described in the notice of amendment form and supporting documentation.

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Approved documents

The documents reviewed and approved at the meeting were:

<i>Document</i>	<i>Version</i>	<i>Date</i>
Copies of advertisement materials for research participants [Advertisement for electronic Cigarette users]	0032	10 October 2014
Covering letter on headed paper		14 October 2014
Notice of Substantial Amendment (non-CTIMP)		13 October 2014
Participant information sheet (PIS) [Amendments to Electronic Cigarette Users' Information Sheet]	0052	10 October 2014
Research protocol or project proposal	0031	10 October 2014

Membership of the Committee

The members of the Committee who took part in the review are listed on the attached sheet.

R&D approval

All investigators and research collaborators in the NHS/social care should notify the R&D office for the relevant NHS/social care organisation of this amendment and check whether it affects R&D approval of the research.

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

HRA Training

The HRA are pleased to welcome researchers and R & D staff at their NRES committee members' training days – see details at <http://www.hra.nhs.uk/hra-training/>

13/IEC08/0001	Please quote this number on all correspondence
---------------	--

Yours sincerely



Dr Martin Stevens
Chair

Barbara Cuddon
Social Care Research Ethics Committee Co-ordinator
Direct Line: 020 7535 0905
Barbara.Cuddon@scie.org.uk

Social Care REC Website: www.screc.org.uk

Enclosures: List of names and professions of members who took part in the review

*Copy to: Professor Steven Wainwright, School of Social Sciences, Brunel University, Uxbridge UB8 3PH
Sally Anne Doyle-Caddick, Hertfordshire Community NHS Trust, Unit 1A, Howard Court, 14 Tewin Road, Welwyn Garden City, Hertfordshire AL7 1BW*

SCHOOL OF SOCIAL SCIENCE RESEARCH ETHICS CHECKLIST - Sociology and Communications

(Effective 1 Oct 2007)

If the ethics submission relates to staff research, for which an application to an external funding agency will be/has been made, then please complete and submit the full University ethics submission form.

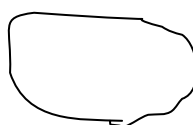
Section I: Project Details

1. Project title: **Use of Electronic Cigarettes in the UK: Users and Stop Smoking Advisors' perspectives**

Section II: Applicant Details

2. Name of researcher (applicant): **Nancy Tamimi**

3. Student ID Number: 1213376



4. Status (please circle): Undergrad Student/ PGT Student/ PGR Student / Staff

5. Discipline: Sociology and Communications

6. Email address: nancy.tamimi@brunel .ac.uk

7. Telephone number 07790821166 / 01923234473

Section III: For Students Only

8. Module name and number: **Sociology and Communication Department at School of Social Science**

9. Brunel supervisor's or module leader's name: **Professor Steven Wainwright**

10. Brunel supervisor's email address: steven.wainwright@brunel.ac.uk

Supervisor: Please tick the appropriate boxes. The study should not begin until all boxes are ticked:

- ☒ The student states that he or she has read the Brunel University Code of Research Ethics.
- ☒ The topic merits further research.
- ☒ The student will possess the skills to carry out the research by the time that he or she starts any work which could affect the well-being of other people. He or she will be deemed to have acquired such skills on passing the relevant research skills module.
- ☒ The participant information sheet or leaflet is appropriate.
- ☒ The procedures for recruitment and obtaining informed consent are appropriate.

Please confirm the professional research ethics code that will guide the research (please circle)

BSA (please state) _____

_Hauke Riesch_____

11.12.2014_____

Supervisor's signature

Date

Section IV: Research Checklist

Please answer each question by ticking the appropriate box:

	YES	NO
1. Does the study involve participants who may be particularly vulnerable and/or unable to give informed consent, thus requiring the consent of parents or guardians? (e.g. children under the age of 16; people with certain learning disabilities)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2a. Will the study require the cooperation of a gatekeeper for initial access to the groups or individuals to be recruited?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2b. If the answer to Question 2a is Yes, then will the study involve people who could be deemed in any way to be vulnerable by virtue of their status within particular institutional settings? (e.g. students at school; disabled people; members of a self-help group; residents of a nursing home, prison, or any other institution where individuals cannot come and go freely)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Does the research involve observational/ethnographic methods?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Will the study involve discussion by or with respondents or interviewees of their own involvement in activities such as sexual behaviour or drug use, where they have not given prior consent to such discussion?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Are drugs, placebos or other substances (e.g. food substances, vitamins) to be administered to the study participants or will the study involve invasive, intrusive or potentially harmful procedures of any kind?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. Will blood or tissue samples be obtained from participants?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7. Is pain or more than mild discomfort likely to result from the study?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Could the study induce psychological stress or anxiety or cause harm or negative consequences beyond the risks encountered in normal life?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

9.	Will the study involve prolonged or repetitive testing?	<input type="checkbox"/>	✓
10.	Will financial inducements (other than reasonable expenses and compensation for time) be offered to participants?	<input type="checkbox"/>	✓
11.	Will the study involve recruitment of patients or staff through the NHS?	<input type="checkbox"/>	✓
12a.	Have you undertaken this study as part of your work placement?	<input type="checkbox"/>	✓
12b.	If your answer to Question 12a is Yes, then have the employers at your work placement conducted their own research ethics review?	<input type="checkbox"/>	<input type="checkbox"/>
13.	Does the research involve MRI, MEG, or EEG methods?	<input type="checkbox"/>	✓

Give a brief description of participants and procedure (methods, tests used, etc) in up to 150 words

This research analyses Electronic Cigarettes (EC) use in Hertfordshire (part of it will be at some smoking cessation clinics). The aim is to study attitudes, experiences and views of EC users and smoking cessation advisors.

Semi-structured interviews will be carried out with 15 to 20 EC users and about 10 stop smoking advisors. The exclusion criteria are users with severe dementia, learning difficulties, mental illness and those unable to conduct an interview in English and/or give informed and written consent.

The interview protocol will comprise open-ended questions that enable detailed discussion of participants' perceptions, views and experience.

When ethical approval is gained, the researcher will approach some smoking cessation clinics with detailed information sheet about the study and ask for voluntary participation.

Stop smoking advisors at some pharmacies will be approached for voluntary participation.

Electronic cigarette users will be recruited through the social media, leaflets that are displayed in clinics and e-cigarette shops, identifications by the stop smoking advisors. And any e-cigarette user in Hertfordshire who voluntarily agree to participate in this research.

If participants decide to take part, they will be asked to sign a consent form. Interviews will be audio-recorded and transcribed verbatim. Data will be analysed using thematic analysis approach.

Name of Principal Investigator at Brunel University (please print): _____ Nancy Tamimi _____

Signature of Principal Investigator at Brunel University: _____

Nancy Tamimi

Email Address: _____

Nancy.tamimi@brunel.ac.uk

Date: _____ 12/11/2104 _____

This request for expedited review has been:

(1) Approved (no additional ethics form is necessary)

(2) Declined (full University ethics form is necessary)

Signature of Departmental Research Ethics Officer: ____ S.J. Weaver _____

Date: _11/12/2014_____

SCHOOL OF SOCIAL SCIENCE RESEARCH ETHICS CHECKLIST - Sociology and Communications

(Effective 1 Oct 2007)

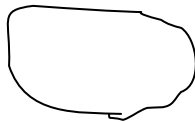
If the ethics submission relates to staff research for which an application to an external funding agency will be/has been made, then please complete and submit the full University ethics submission form.

Section I: Project Details

1. Project title Electronic Cigarettes Use in The UK: Users and Stop Smoking Advisors' Perspectives

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Section II: Applicant Details

2. Name of researcher (applicant): Nancy Tamimi
3. Student ID Number: 1213376

4. Status (please circle): Undergrad Student/ PGT Student/ PGR Student / Staff
5. Discipline: Sociology and Communications
6. Email address: <u>nancy.tamimi@brunel</u> .ac.uk
7. Telephone number 07790821166 / 01923234473

Section III: For Students Only

8. Module name and number: Sociology and Communication Department at School of Social Science
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9. Brunel supervisor's or module leader's name: **Professor Steven Wainwright**

10. Brunel supervisor's email address: **steven.wainwright@brunel.ac.uk**

Supervisor: Please tick the appropriate boxes. The study should not begin until all boxes are ticked:

X ☐ The student states that he or she has read the Brunel University Code of Research Ethics.

X ☐ The topic merits further research.

X ☐ The student will possess the skills to carry out the research by the time that he or she starts any work which could affect the well-being of other people. He or she will be deemed to have acquired such skills on passing the relevant research skills module.

X ☐ The participant information sheet or leaflet is appropriate.

X ☐ The procedures for recruitment and obtaining informed consent are appropriate.

Please confirm the professional research ethics code that will guide the research (please circle)

ASA/BPS/BSA/Other (please state) _BSA_____

Supervisor's signature

Hauke Riesch

Date 4.2.2015

Section IV: Research Checklist

Please answer each question by ticking the appropriate box:

	YES	NO
2. Does the study involve participants who may be particularly vulnerable and/or unable to give informed consent, thus requiring the consent of parents or guardians? (e.g. children under the age of 16; people with certain learning disabilities)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2a. Will the study require the cooperation of a gatekeeper for initial access to the groups or individuals to be recruited?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2b. If the answer to Question 2a is Yes, then will the study involve people who could be deemed in any way to be vulnerable by virtue of their status within particular institutional settings? (e.g. students at school; disabled people; members of a self-help group; residents of a nursing home, prison, or any other institution where individuals cannot come and go freely)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Does the research involve observational/ethnographic methods?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Will the study involve discussion by or with respondents or interviewees of their own involvement in activities such as sexual behaviour or drug use, where they have not given prior consent to such discussion?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Are drugs, placebos or other substances (e.g. food substances, vitamins) to be administered to the study participants or will the study involve invasive, intrusive or potentially harmful procedures of any kind?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
12. Will blood or tissue samples be obtained from participants?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
13. Is pain or more than mild discomfort likely to result from the study?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
14. Could the study induce psychological stress or anxiety or cause harm or negative consequences beyond the risks encountered in normal life?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

15.	Will the study involve prolonged or repetitive testing?	<input type="checkbox"/>	✓
16.	Will financial inducements (other than reasonable expenses and compensation for time) be offered to participants?	<input type="checkbox"/>	✓
17.	Will the study involve recruitment of patients or staff through the NHS?	<input type="checkbox"/>	✓
12a.	Have you undertaken this study as part of your work placement?	<input type="checkbox"/>	✓
12b.	If your answer to Question 12a is Yes, then have the employers at your work placement conducted their own research ethics review?	<input type="checkbox"/>	<input type="checkbox"/>
13.	Does the research involve MRI, MEG, or EEG methods?	<input type="checkbox"/>	✓

Give a brief description of participants and procedure (methods, tests used, etc) in up to 150 words

This research analyses Electronic Cigarettes (EC) use in Hertfordshire (part of it will be at some smoking cessation clinics). The aim is to study attitudes, experiences and views of EC users and smoking cessation advisors. Semi-structured interviews face to face or over the phone or skype will be carried out with 15 to 20 EC users and about 10 stop smoking advisors. The exclusion criteria are users with severe dementia, learning difficulties, mental illness and those unable to conduct an interview in English and /or give informed and written consent. The interview protocol will comprise open-ended questions that enable detailed discussion of participants' perceptions, views and experience. When ethical approval is gained, the researcher will approach some smoking cessation clinics with detailed information sheet about the study and ask for voluntary participation. Stop smoking advisors at some pharmacies will be approached for voluntary participation. Electronic cigarette users will be recruited through the social media, leaflets that is displayed in clinics and e-cigarette shops, identifications by the stop smoking advisors. And any e-cigarette user in Hertfordshire who voluntarily agree to participate in this research. If participants decide to take part, they will be asked to sign a consent form. Interviews will be audio-recorded and transcribed verbatim. Data will be analysed using thematic analysis approach.

New Site

This research analyses Electronic Cigarettes (EC) use in Barking and Dagenham and East Sussex at some smoking cessation clinics. The aim is to study attitudes, experiences and views of EC users and smoking cessation advisors. Recruiting the e-cigarettes participants will be in one or two ways depending on the number generated.

1. The service has a database for all their clients. Clients already gave their consent for the service to contact them. The Director of Public Health and lifestyle services at this site has offered to send out messages to all e-cigarette users to promote my study including my contact details.
2. The Stop Smoking Advisors would identify e-cigarette users and provide them with my contact details or ask their permission for me to contact them.
3. The service may offer me permission to be present at the sites of the clinics and approach e-cigarette users directly.

Recruiting Stop Smoking Advisors: An email will be sent out to all advisors with the help of the Director of Public Health and lifestyle services. An invitation letter and information sheet will be attached to emails. Semi-structured interviews face to face or over the phone or skype will be carried out with 15 to 20 EC users and about 10 stop smoking advisors. The exclusion criteria are users with severe dementia, learning difficulties, mental illness and those unable to conduct an interview in English and/or give informed and written consent. .

The interview protocol will comprise open-ended questions that enable detailed discussion of participants' perceptions, views and experience. If participants decide to take part, they will be asked to sign a consent form. Interviews will be audio-recorded and transcribed verbatim. Data will be analysed using thematic analysis approach.

There is a possibility I will introduce a prize draw of £50 to encourage e-cigarette users to participate

Name of Principal Investigator at Brunel University (please print): _____ Nancy Tamimi _____

Signature of Principal Investigator at Brunel University: _____

Nancy Tamimi

Email Address: _____

Nancy.tamimi@brunel.ac.uk

Date: _____ 4/2/2015 _____

This request for expedited review has been: **(1) Approved (no additional ethics form is necessary)**

(2) Declined (full University ethics form is necessary)

Signature of Departmental Research Ethics Officer: S.J. Weaver (Simon Weaver) _____

Date: 10th February 2015 _____



Quit 51 Stop Smoking Service
Ff15-18 IMEX Business Centre
Shobnall Road
Burton-on-Trent
DE14 2AZ
Freepost Lifestyle Change
StopSmokingAdviser@north-51.com
Freephone: 0800 622 6968
Text 'smokefree' to 66777

26th March 2015

STATEMENT OF SPONSORSHIP

Proposer: Nancy Tamimi

Title: Electronic Cigarettes Use at Smoking Cessation Service in UK: Users and Staff Perspectives

I hereby confirm that I am, along with Quit 51 Stop Smoking Service, are supporting Nancy Tamimi in her PhD research on e-cigarettes. Specifically that:

- Nancy has been in contact with me regarding her research
- I have provided her with relevant information she requires, including access to staff members and service users (for participant recruitment)
- Identified potential participants from Quit 51 records who use e-cigarettes, and sent text messages out asking them for their participation
- Staff members received emails informing them of this study / asking them for their participation
- I consented for Nancy to commence her activities after receiving confirmation of relevant ethical approval

If you require any further information, please do contact me.

Yours faithfully
Emma Croghan
Director of Public Health and Lifestyle Services
Division of Public Health and Lifestyle Services

EXPEDITED REVIEW CHECKLIST, School Of Social Sciences, Sociology and Communications

Brunel University Effective 1 October 2007

SCHOOL OF SOCIAL SCIENCE RESEARCH ETHICS CHECKLIST- Sociology and Communications

(Effective 1 Oct 2007)

If the ethics submission relates to staff research for which an application to an external funding agency will be/has been made, then please complete and submit the full University ethics submission form.

Section I: Project Details

1. Project title: **Use of Electronic Cigarettes in The UK: Users and Stop Smoking Advisors' perspectives**

Section II: Applicant Details

2. Name of researcher (applicant): **Nancy Tamimi**

3. Student ID Number: 1213376



4. Status (please circle): Undergrad Student/ PGT Student/ PGR Student / Staff

5. Discipline: Sociology and Communications

6. Email address: nancy.tamimi@brunei.ac.uk

7. Telephone number 07790821166 / 01923234473

Section III: For Students Only

8. Module name and number: **Sociology and Communication department at School of Social Science**

9. Brunel supervisor's or module leader's name: **Professor Steven Wainwright**

10. Brunel supervisor's email address: **steven.wainwright@brunel.ac.uk**

Supervisor: Please tick the appropriate boxes. The study should not begin until all boxes are ticked:

- ☒ The student states that he or she has read the Brunel University Code of Research Ethics.
- ☒ The topic merits further research.
- ☒ The student will possess the skills to carry out the research by the time that he or she starts any work which could affect the well-being of other people. He or she will be deemed to have acquired such skills on passing the relevant research skills module.
- ☒ The participant information sheet or leaflet is appropriate.
- ☒ The procedures for recruitment and obtaining informed consent are appropriate.

Please confirm the professional research ethics code that will guide the research (please circle)

BSA (please state) _____

_Hauke Riesch _____

7.5.2015 _____

Supervisor's signature

Date

Section IV: Research Checklist

Please answer each question by ticking the appropriate box:

	YES	NO
3. Does the study involve participants who may be particularly vulnerable and/or unable to give informed consent, thus requiring the consent of parents or guardians? (e.g. children under the age of 16; people with certain learning disabilities)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2a. Will the study require the cooperation of a gatekeeper for initial access to the groups or individuals to be recruited?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2b. If the answer to Question 2a is Yes, then will the study involve people who could be deemed in any way to be vulnerable by virtue of their status within particular institutional settings? (e.g. students at school; disabled people; members of a self-help group; residents of a nursing home, prison, or any other institution where individuals cannot come and go freely)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Does the research involve observational/ethnographic methods?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Will the study involve discussion by or with respondents or interviewees of their own involvement in activities such as sexual behaviour or drug use, where they have not given prior consent to such discussion?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Are drugs, placebos or other substances (e.g. food substances, vitamins) to be administered to the study participants or will the study involve invasive, intrusive or potentially harmful procedures of any kind?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
18. Will blood or tissue samples be obtained from participants?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
19. Is pain or more than mild discomfort likely to result from the study?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
20. Could the study induce psychological stress or anxiety or cause harm or negative consequences beyond the risks encountered in normal life?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

21.	Will the study involve prolonged or repetitive testing?	<input type="checkbox"/>	✓
22.	Will financial inducements (other than reasonable expenses and compensation for time) be offered to participants?	<input type="checkbox"/>	✓
23.	Will the study involve recruitment of patients or staff through the NHS?	<input type="checkbox"/>	✓
12a.	Have you undertaken this study as part of your work placement?	<input type="checkbox"/>	✓
12b.	If your answer to Question 12a is Yes, then have the employers at your work placement conducted their own research ethics review?	<input type="checkbox"/>	<input type="checkbox"/>
13.	Does the research involve MRI, MEG, or EEG methods?	<input type="checkbox"/>	✓

Give a brief description of participants and procedure (methods, tests used etc) in up to 150 words

This research analyses Electronic Cigarettes (EC) use in Hertfordshire (part of it will be at some smoking cessation clinics). The aim is to study attitudes, experiences and views of EC users and smoking cessation advisors.

Semi-structured interviews will be carried with 15 to 20 EC users and about 10 stop smoking advisors. The exclusion criteria are users with severe dementia, learning difficulties, mental illness and those unable to conduct an interview in English and /or give informed and written consent.

The interview protocol will comprise open-ended questions that enable detailed discussion of participants' perceptions, views and experience.

When ethical approval is gained, the researcher will approach some smoking cessation clinics with detailed information sheet about the study and ask for voluntary participation.

Stop smoking advisors at some pharmacies will be approached for voluntary participation.

Electronic cigarette users will be recruited through the social media, leaflets that is displayed in clinics and e-cigarette shops, identifications by the stop smoking advisors. And any e-cigarette user in Hertfordshire who voluntarily agree to participate in this research.

If participants decide to take part, they will be asked to sign a consent form. Interviews will be audio-recorded and transcribed verbatim. Data will be analysed using thematic analysis approach.

Also the following method will be used to collect data: An advertisement will be put up on Brunel University London website to ask for electronic cigarette users to participate in the research. A snowball sampling technique will be utilised to get more participants. Information sheet will be provided to each potential participant. If participants decide to take part, they will be asked to sign a consent form. Interviews will be audio-recorded and transcribed verbatim. Data will be analysed using thematic analysis approach.

This is the text for the advertisement:

(I am a PhD student at Brunel University London, and I would like to talk to people about their experiences of using e-cigarettes. If you are interested in taking part in this research and for more information, please contact me on my email: nancy.tamimi@brunel.ac.uk or phone 07741546059). At this point there will be no incentives to encourage participation. If the participation is low, the researcher will introduce a £50 prize draw.

Name of Principal Investigator at Brunel University (please print): _____ Nancy
Tamimi _____

Signature of Principal Investigator at Brunel University: _____

Nancy Tamimi

Email Address: _____

Nancy.tamimi@brunel.ac.uk

Date: ____ 7th May 2015 _____

This request for expedited review has been: **(1) Approved (no additional ethics form is necessary)**

(2) Declined (full University ethics form is necessary)

Signature of Departmental Research Ethics Officer: __ Dr Simon Weaver _____

Date: __ 21st May 2015 _____

Appendix 2: A Sample of invitation letters and information sheets

Hertfordshire Community NHS Trust

Nancy Tamimi
School of Social Sciences
Brunel University
Uxbridge
Middlesex
UB8 3PH

Unit 1A, Howard Court
14 Tewin Road
Welwyn Garden City
Hertfordshire
AL7 1BW

01707 388000

U:\Nancy\IRAS\007
1 December 2013

Dear Sir/Madam,

‘Electronic Cigarettes Use at Smoking Cessation Service in UK: Users and Staff Perspectives’

I am a PhD student at the School of Social Science at Brunel University London, interested in studying the use of Electronic cigarettes at the Stop Smoking Service in Hertfordshire. I am inviting you to take part in a research study titled ‘Electronic Cigarettes Use at Smoking Cessation Service in UK: Users and Staff Perspectives’

The aim of the research is to analyse Electronic Cigarettes (EC) use at the Stop Smoking clinics in Hertfordshire. The information from this research could provide information about the experience of electronic cigarettes use and the different perspectives of the staff and the users, which may be of benefit to health professionals, scientists, policymakers and regulatory bodies.

You are an important person who can help me with this research, as a Smoking Cessation advisor at the stop smoking clinics in Hertfordshire; I will be interested to listen to your views and experience.

Attached is a detailed information sheet about the research. If you agree to take part in the project, I will contact you during the following week to ask for your consent and arrange an interview at a time and location that is convenient. The interview would last one hour. I will ask you about your experience with clients who decides to use Electronic Cigarettes, how the treatment goals at the clinics are initiated and negotiated; What are the factors that affect the decision to use EC; what is the role of digital information-if any- on EC initiation, use and conceptualisation; how do you view and conceptualise EC use and how do you think the experience of EC use affects the users compared with previous experiences (as similar or different to other smoking cessation treatments).

If you have any questions please do not hesitate to contact me on my email
nancy.tamimi@brunel.ac.uk or mobile 07790821166

Thank you
Yours Sincerely,
Nancy Tamimi

Nancy Tamimi
School of Social Sciences
Brunel University
Uxbridge
Middlesex
UB8 3PH

Unit 1A, Howard Court
14 Tewin Road
Welwyn Garden City
Hertfordshire
AL7 1BW
01707 388000

U:\Nancy\IRAS\008
1 December 2013

Dear Sir/Madam,

‘Electronic Cigarettes Use at Smoking Cessation Service in UK: Users and Staff Perspectives’

I am a PhD student at the School of Social Science at Brunel University London, interested in studying the use of Electronic cigarettes at the Stop Smoking Service in Hertfordshire. I am inviting you to take part in a research study titled ‘Electronic Cigarettes Use at Smoking Cessation Service in UK: Users and Staff Perspectives’

The aim of the research is to analyse Electronic Cigarettes use at the Stop Smoking clinics in Hertfordshire. The information from this research could provide information about the experience of electronic cigarettes use and the different perspectives of the staff and the users, which may be of benefit to health professionals, scientists, policymakers and regulatory bodies.

You are an important person who can help me with this research, as an electronic cigarette user and a client at the stop smoking clinics in Hertfordshire; I will be interested to listen to your views and experience.

With your permission, the stop smoking advisor will pass me your contact details. You will be provided with a detailed information sheet about the study. I will, then, contact you during the following week to ask for your consent and arrange an interview at a time and location that is convenient. The interview would last one hour. I will ask you about your experience in using electronic Cigarettes, how and why you decided to use them; where do you get the information about electronic cigarettes and if you use any electronic cigarettes websites; how do you view electronic cigarettes use and how is the experience of their use compared with previous smoking cessation treatments.

If you have any questions please do not hesitate to contact me on my email nancy.tamimi@brunel.ac.uk or my mobile 07790821166.

Thank you

Yours Sincerely,

Nancy Tamimi

INFORMATION SHEET

Interview (Electronic Cigarette user)

U:\Nancy\IRAS\0051

22 January 2014

ELECTRONIC CIGARETTES USE AT SMOKING CESSATION SERVICE IN UK: USERS AND STAFF

PERSPECTIVES

Introduction

We would like to invite you to participate in a research project. You should only participate if you want to; choosing not to take part will not disadvantage you in any way. Before you decide whether you want to take part, it is important for you to understand why the research is being done and what your participation will involve. Please take time to read the following information carefully and discuss it with others if you wish. Contact the researcher if there is anything that is not clear or if you would like more information

What is the purpose of this study?

The purpose of this study is to analyse Electronic Cigarettes (EC) use at smoking cessation clinics in Hertfordshire as part of the new harm reduction strategy. The aim is to explore the EC users and the staff attitudes, experiences and views about EC use. What similarities and differences are there between the staff's and the users' conceptions? How do the staff adapt their work to the users' needs and wishes? And how do they conceive EC use generally and in comparison with earlier treatment experience. One part of the study involves talking to EC users; this will enable the researcher, Mrs Nancy Tamimi, to explore the use of EC in clinics. You are invited to participate in this study by accepting to be interviewed by the researcher, Mrs Tamimi.

Who is conducting the research?

Nancy Tamimi, will be conducting the interviews. Professor Steven Wainwright is the supervisor of the PhD Project.

Who is funding the research?

The research is being funded by the researcher.

What will you be invited to do?

If you are interested in participating, your contact details will be passed to the researcher. You will be given a minimum of 24 hours to decide. If you have any question, please feel free to contact the researcher Mrs Nancy Tamimi. Within a week of passing your contact details- but not before you are given the 24 hours- Nancy Tamimi will contact you to ask you about your decision. If you decide to participate, the researcher will arrange with you an interview, at a time and location convenient for you lasting about one hour and you will be asked to sign an "informed consent" form. During the interview, I will ask you about your experience in using EC, how and why you decided to use EC; What are the reasons that affect the decision to use EC; where you get the information about EC and if you use any EC websites; how do you view EC use and how is the experience of EC use is compared with previous smoking cessation treatments. It is your right to refuse to answer specific questions, to discontinue your participation, or to ask me to explain my questions. Interviews will be audio recorded, subject to your permission. Recordings of interviews will be deleted at the end of the project. If you do not wish the interview to be recorded, I will take notes as we talk. You are also free to have any interview data pertaining to you withdrawn from the study within three months after the interview.

Possible risks of participation

You may feel uncomfortable talking about some issues related to EC use or smoking experience. Our aim is to provide all participants with safe, respectful and confidential opportunities to discuss their beliefs and opinions in connection with EC

Possible benefits of participation

Once the research is finished, it could provide information about the different concepts, views, experiences of using EC at smoking cessation service, which may be of benefit to health professionals, scientists, policymakers and regulatory bodies. It may also help contribute to a more informed public perception of using EC.

Will the information you provided be kept confidential?

Everything you say/report is confidential unless you tell us something that indicated that you or someone else is at risk of harm. We would discuss this with you before telling anyone else. All information that is collected about you during the course of the research will be anonymous and kept strictly confidential, in accordance with the 1998 Data Protection Act. Any notes we make will be given a code number to ensure that they are not traceable to an individual. All the notes will be stored securely in a research office for 7 years from the project completion. Professor Steven Wainwright, Professor Clare Williams and Mrs Nancy Tamimi will be the only people with access to this stored data.

What will happen to the results of the research study?

The data provided by this study will be used to write a PhD thesis and a number of reports and papers in academic journals. Participants and the research site will not be identified on any report/publication. You will be able to access publications from the Brunel University webpage.

What do you do now?

It is up to you to decide whether or not to take part.

If you are interested in hearing more about the study then please contact Nancy Tamimi who will be happy to answer any questions you may have. If you agree to participate, then interviews will be scheduled at a time and place convenient for you. If you do decide to take part, you will be asked to sign a consent form and be given a copy of this and the information sheet to keep.

What if you decided not to take part?

You are free to decide not to take part. Even if you do agree to take part, you are free to withdraw from the study at any time without giving an explanation; this will have no effect on the care you are receiving. Mrs Tamimi will not use your interview data. *Withdrawal will not be possible once data has been used in publications (3 months after participation).*

What if you have any concerns or questions?

If you have any concerns or questions about this study or the way it has been carried out, then please contact, in the first instance, the researcher. If this does not resolve your concerns, please contact Professor Steven Wainwright, Head of the Sociology and Communication department, Brunel University. You can contact the Ethics Officer in Sociology and Communications at Brunel University London, Dr Simon Weaver to obtain an independent information or advice about your rights as research subject or about being involved in this particular research study or if you wish to make a complaint about the research. All contact details are given at the end of this sheet.

Who has approved the study?

The study has gained the ethical approval of the School of Social Science at Brunel University London and the Research Governance Committee for the Adult Care Service in Hertfordshire and the Social Care REC (An NRES Research Ethics Committee).

CONTACT DETAILS

Nancy Tamimi
Department of Sociology and
Communication
School of Social Sciences

Brunel University London

Telephone: 07741546059(Mobile)
Email: Nancy.tamimi@brunel.ac.uk

Professor Steven Wainwright
Department of Sociology and
Communication
School of Social Sciences

Brunel University London

Phone: 077930565899(Mobile)
Email: Steven.wainwright@brunel.ac.uk

Dr Simon Weaver

Department of Sociology and
Communications

School of Social Sciences

Brunel University London

Telephone: +44 (0)1895 265029

E-mail: simon.weaver@brunel.ac.uk

Thank you for reading this information sheet

INFORMATION SHEET

Interview (Smoking Cessation Advisor)

U:\Nancy\IRAS\0061

22 January 2014

ELECTRONIC CIGARETTES USE AT SMOKING CESSATION SERVICE IN UK: USERS AND STAFF PERSPECTIVES

Introduction

We would like to invite you to participate in this original PhD research project. You should only participate if you want to; choosing not to take part will not disadvantage you in any way. Before you decide whether you want to take part, it is important for you to understand why the research is being done and what your participation will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask the researcher if there is anything that is not clear or if you would like more information.

What is the purpose of this study?

I would like to interview some smoking cessation advisors and Electronic Cigarette users from the smoking cessation service in Hertfordshire. The purpose of this study is to analyse Electronic Cigarettes (EC) use at smoking cessation clinics in Hertfordshire as part of the new harm reduction strategy. The aim is to explore the EC users and the staff attitudes, experiences and views about EC use. What similarities and differences are there between the staff's and the users' conceptions? How do the staff adapt their work to the users' needs and wishes? And how do they conceive CE use generally and in comparison with earlier treatment experience? I wish to gain an in-depth understanding of the Smoking Cessation Advisors' perspectives by talking to them about their views.

Who is conducting the research?

I, Nancy Tamimi, will be conducting the interviews. Professor Steven Wainwright is the supervisor of the PhD Project.

What will you be invited to do?

You can be involved in this research in either or both of the following **First** I would like you to provide your clients who use EC with an invitation letter and information sheet for my research. And ask them if they agree for you to pass their contact details to me to contact them and ask about their decision. I will be contacting them after they are given a minimum of 24 hours to decide whether to take part in the research or not, they also can contact me if they wish.

Second I would like to interview you as a smoking cessation advisor. Should you decide to be interviewed, I will contact you to arrange an interview lasting about one hour, at a time and location convenient for you. During the interview, I will ask you about your experience with clients who decide to use EC, how the treatment goals at the clinics are initiated and negotiated; what are the factors that affect the decision to use EC; what is the role of digital information on EC initiation, use and conceptualisation; how do you view and conceptualise EC use and how does the experience of EC use compare with previous experiences (as similar or different to other smoking cessation treatments). It is your right to refuse to answer specific questions, to discontinue your participation, or to ask me to explain my questions. Interviews will be audio recorded, subject to your permission. Recordings of interviews will be deleted at the end of the project. If you do not wish the interview to be recorded, I will take notes as we talk. You are also free to have any interview data pertaining to you withdrawn from the study within three months after the interview.

Who is funding the research?

The research is being funded by the researcher.

Possible risks of participation in the interview

Most people enjoy talking about their work. However some staff may feel less comfortable talking about some issues associated with EC use at the Smoking Cessation Service. Issues may be raised that the interview and/or study cannot resolve. Our aim is to provide all participants with safe, respectful and confidential opportunities to discuss your beliefs and opinions in connection with EC use.

Possible benefits of participation

You may find the topic interesting, and relevant to your professional work. Once the research is finished, it could provide information about the experience of EC use and the different perspectives of the staff and the users, which may be of benefit to health professionals, scientists, policymakers and regulatory bodies.

Will the information you provided be kept confidential?

Everything you say/report is confidential unless you tell us something that indicated that you or someone else is at risk of harm. We would discuss this with you before telling anyone else. All information that is collected about you and about the clients during the course of the research will be anonymous and kept strictly confidential, in accordance with the 1998 Data Protection Act. Any notes we make will be given a code number to ensure that they are not traceable to an individual. All the notes will be stored securely in a research office for 7 years from the project completion. Professor Steven Wainwright, Professor Clare Williams and I will be the only people with access to this stored data. You should be aware that I am obliged to report any instances of professional misconduct to the proper authorities.

What will happen to the results of the research study?

The data provided by this study will be used to write a PhD thesis and a number of reports and papers in academic journals. Participants and the research site will not be identified on any report/publication. You will be able to access publications from the Brunel University webpage.

What do you do now? It is up to you to decide whether or not to take part in either or both of the following: You can participate either by identifying EC users, provide them with the invitation letter and information sheet and pass their contact details to me (if they agreed) to contact them. You can also participate by agreeing to be interviewed by the researcher.

If you are interested in hearing more about the study then please contact me (Nancy Tamimi) and I will be happy to answer any questions you may have. If you agree to participate in the interview, then interviews will be scheduled at a time and place convenient for you. You will be asked to sign a consent form and be given a copy of this and the information sheet to keep.

What if you decided not to take part? You are free to decide not to take part. Even if you do agree to take part, you are free to withdraw from the study at any time without giving an explanation, and I will not use your interview data. Withdrawal will not be possible once data has been used in publications (3 months after participation).

What if you have any concerns or questions?

If you have any concern or question about this study or the way it has been carried out, then please contact, in the first instance, the researcher. If this does not resolve your concerns, please contact Professor Steven Wainwright, Head of the Sociology and Communication department. You can contact the Ethics Officer in Sociology and Communications at Brunel University London, Dr Simon Weaver to obtain an independent information or advice about your rights as research subject or about being involved in this particular research study or if you wish to make a complaint about the research. All contact details are given at the end of this sheet.

Who has approved the study?

The study has gained the ethical approval of the School of Social Science at Brunel University London and the Research Governance Committee for the Adult Care Service in Hertfordshire and the Social Care REC (an NRES Research Ethics Committee).

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Thank you for reading this information sheet

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22/January/2014

CONSENT FORM

Interview with Electronic Cigarette User

ELECTRONIC CIGARETTES USE AT SMOKING CESSATION SERVICE IN UK: USERS AND STAFF

PERSPECTIVES

Researcher: Nancy Tamimi, Department of Sociology and Communication; First supervisor: Professor Steven Wainwright

- I confirm that I have read and understand the information sheet dated
for the above study and have had the opportunity to ask questions. **Yes/NO**
- I understand that my participation is voluntary and that I am free to withdraw data
pertaining to my consultation within three months of participating, without giving any
reason, and without my legal rights being affected. **Yes/NO**
- I agree to be interviewed by the researcher Nancy Tamimi for approximately 1 hour. **Yes/NO**
- I understand that data from the interview will inform the study and may be used
anonymously in publications. **Yes/NO**
- I agree for the interview to be audio-recorded **Yes /NO**
- I agree to take part in this interview subject to the conditions agreed above **Yes/NO**

_____	_____	_____
Name of Participants	Date	Signature
I confirm that I have explained the proposed study to the participant:		
_____	_____	_____
Researcher	Date	Signature

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CONSENT FORM

U:\Nancy\IRAS\0021
22/January/2014

Smoking Cessation Advisor

ELECTRONIC CIGARETTES USE AT SMOKING CESSATION SERVICE IN UK: USERS AND STAFF PERSPECTIVES

Researcher: Nancy Tamimi, Department of Sociology and Communication; First supervisor: Professor Steven Wainwright

- I confirm that I have read and understand the information sheet dated
for the above study and have had the opportunity to ask questions. **Yes /No**
- I understand that my participation is voluntary and that I am free to withdraw data pertaining to my consultation within three months of participating, without giving any reason, and without my legal rights being affected. **Yes /No**
- I agree to be interviewed by the researcher Nancy Tamimi for approximately 1 hour. **Yes /No**
- I understand that data from the interview will inform the study and may be used anonymously in publications. **Yes /No**
- I agree to provide clients who use e-cigarettes with the invitation letter and information sheet and pass their contact details to the researcher if they agreed. **Yes /No**
- I agree for the interview to be audio-recorded. **Yes /No**
- I agree to take part in the interview subject to the conditions agreed above. **Yes /No**

Name of Participants

Date

Signature

I confirm that I have explained the proposed study to the participant:

Researcher

Date

Signature

One copy for participant; one copy for researcher

Appendix 4: Draft interview topic guide



DRAFT INTERVIEW TOPIC GUIDE – Stop smoking advisors and Electronic Cigarette (EC) users

(as per accepted qualitative methodologies, this is a draft guide, and questions/topics may be adapted as interviews get underway)

A qualitative study of the use of Electronic Cigarettes at Smoking Cessation Service: Users and Staff Perspectives

Housekeeping

- (i) I am interested in your views and experiences of using electronic cigarettes. So please feel free to elaborate wherever you think it will help.
- (ii) The interview is completely anonymous and will be kept confidential (only my academic supervisors and I will have access to the audio-recordings and transcripts). Interviewees will not be identified in any publications, presentations etc.
- (iii) If it is ok with you, I would like to make an audio recording of the interview. We can turn the audio recorder off at any time you request. We can also stop the interview at any time you wish, and you can decline to answer any question.

For The EC Users:

This section only for service users

EC Use Decision (Only if they are using/ used the Stop Smoking Service)

Do you use the Stop Smoking Service?

How long have you been using the Smoking Cessation Service?

Have you used it before? Tell me about your experience at the service?

Could you tell me why you chose to use the Smoking Cessation service? What is it what you wanted or you expected to achieve when you first came to the clinic?

Can you tell me how the decision to use EC was made? What role did the advisor have in deciding the treatment? How much control did you have in making the decision? Is there any negotiation from your side or the advisor side?

Institutional /Professional Influence

In your opinion, is there any favour for a particular treatment at the smoking cessation service? Can you elaborate?

The Role of Digital Information

What information is given to you about EC in the clinic? How is this information presented?

This section is for both service and non-service users

EC use decision

What are the reasons that made you decide to use EC?

How long have you been using EC?

How often do you use EC? Tell me about the brand and the way you use it and your experience in general since you started.

What do you like/dislike about EC?

Are you planning to use them in the long term?

Are you a supporter or against EC use?

Do you think, if you stopped EC, you will go back to smoking?

The Role of Digital Information

Where did you hear about EC?

Whenever you want to know more about EC, where do you get the information about EC from?

There is a lot of information about EC on the Internet and websites for EC users; do you use any? If yes, can you name some websites?

Do you think the Internet has an influence on your decision to use EC? If yes, can you tell me how and give me examples.

Smoking History/ Service Use History/Smoking Cessation History

How many years did you smoke? How many cigarettes a day did you use to smoke?

Do you still smoke cigarettes?

What do/did you like about smoking?

How many times have you attempted to quit smoking?

What are the treatments you used so far to help you stop smoking?

EC Efficacy and Conceptualisation

Having used other treatments, in what aspects do you consider EC different than other treatments?

In your opinion, does EC use have any particular effect on your attitude, personality, identity, social life, dealing with craving symptoms, how people see you, or any other aspect in your life?

How effective do you think EC is as a smoking cessation treatment?

How do you view EC? Some people view them as a medicine to treat nicotine addiction; others view them as a way of smoking to keep the nicotine addiction alive. Do you have a different view for EC? Could you explain your view more?

Do you have any views about the debate that is going on about EC? Gateway, use in public places, licensing them as medicine?

For the Staff

Professional Background

What is your official position? Tell me a little bit about what your work involves. What expertise and skills does it require?

If applicable. How long have you worked in the smoking cessation service?

How many Electronic Cigarette (EC) users have you worked with?

Do you feel your training has prepared you for working with EC users?

Management of EC Use

When you start with each client, what do you aim to achieve from providing the service? Do you have specific goal/goals that you aim to achieve? Is it different from one client to another? What is taken into consideration when deciding upon a treatment option?

For those who decide to use EC: In your opinion, what are the reasons for opting to use them over the other options?

How is the decision to use EC usually made? What role do you have in deciding the treatment? How much control is the client given in making the decision? Is there any negotiation from your side or the client side? Could you give me an example?

The Role of Digital Information

What information is given to clients about EC? How is this information presented? What is the source of information?

There is a lot of information about EC on the Internet; do you use the Internet to get information about EC? If yes, can you name some websites?

From your experience, do you think the Internet has an influence on your clients' decision to use EC? If yes, can you tell me how and give me examples.

EC Efficacy and Conceptualisation

Having seen the client using other treatments, in what aspects do you consider EC different than other treatments?

In your experience, does EC use have any particular effect on the client's attitude, personality, identity, social life, dealing with craving symptoms, etc?

How effective do you think EC is as a smoking cessation treatment?

Are you with or against the use of EC cigarettes? Why? Tell me more...

How do you view EC? Some people view them as a medicine to cure nicotine addiction; others view them as a medium to deliver nicotine to maintain the addiction. Do you have a different view for EC? Could you explain your view more?

Institutional/Professional Influence

In your opinion, are there aspects of the current political climate which favour one treatment over the other? Could you tell me more?

How do you view the new NICE guidelines regarding the use of EC? Why?

Other considerations

Is there anything we have not covered that you think would help me understand more about this area of EC use?

Thanks very much for your participation. If, afterwards, you think of something that was mentioned today that you would prefer not to be included in any publications or presentations, please let me know within three months and I will have the information withdrawn.

Also, resulting publications will be available on the School of Social Science, Brunel University website. If you would like, I can send you a report of the findings of this research.

Appendix 5: The number of all interviews that were included in the analysis

1. Interviews with Stop Smoking Advisors. Total: 13		
1.1. Hertfordshire	I conducted 7 face to face interviews.	
1.2. East Sussex	I conducted 6 phone interviews.	
2. Interviews with electronic cigarette users: Total: 15 (5 only are service users)		
2.1. Hertfordshire	I conducted 1 face to face interview with service user.	Total: 8
	I conducted 7 face to face interviews with non-service users.	
2.2. East Sussex	I conducted 4 phone interviews with service users.	Total: 4
3. From other areas in South East England.	I conducted 2 face to face interviews, and only one phone interview with non-service users.	Total: 3

Appendix 6: A full list of interviews conducted with stop smoking advisors

Stop smoking advisors	County	Gender	Years of experience	Interview Date
H1	Hertfordshire	Female	10 years	3/6/2014
H2	Hertfordshire	Female	1 year	5/6/2014
H3	Hertfordshire	Male	7 months	4/4/2014
H4	Hertfordshire	Female	4 years	25/6/2014
H5	Hertfordshire	Female	1 year	10/6/2014
H6	Hertfordshire	Female	15 years	10/6/2014
H7	Hertfordshire	Male	5 years	19/11/2014
S1	East Sussex	Male	3 years	26/2/2015
S2	East Sussex	Male	7 years	27/2/2015
S3	East Sussex	Female	3.5 years	5/6/2015
S4	East Sussex	Female	1 year	11/3/2015
S5	East Sussex	Female	16 months	11/3/2015
S6	East Sussex	Female	4 years	4/3/2015

Appendix 7: A full list of interviews conducted with electronic cigarette users

electronic cigarette users	County	Interview Date
1A	Hertfordshire	13/11/2014
2B	Hertfordshire	12/12/2014
3C	Hertfordshire	18/12/2014
4D	Hertfordshire	20/2/2015
5E	East Sussex	21/4/2015
6F	East Sussex	21/4/2015
7G	East Sussex	30/4/2015
8H	Hertfordshire	9/6/2015
9I	Hertfordshire	9/6/2015
10J	Hertfordshire	22/6/2015
11K	Uxbridge	24/6/2015
12L	Uxbridge	14/7/2015
13M	Hounslow	27/7/2015
14N	East Sussex	19/6/2015
15O	Hertfordshire	12/5/2015

Appendix 8: An illustration of the process of coding from the two sets of data inductively

Major themes	Reviewed Themes	Initial themes & subthemes	Codes	Quotes
1. E-cigarettes as Ambiguous Novelty	The Ambiguity of Electronic Cigarettes 'Status and Efficacy	Theme: Status & Efficacy debate Subthemes Medicinal Recreational	E-cig as alternative to smoking	<i>"I think at the moment it is seen as an alternative to smoking"</i> (H6, Advisor) <i>"last night I did have a cigarette when I was out with friends, but I also had my electronic cigarette with me, which I use as my main source of nicotine"</i> (14N, user)
			Effective like NRT	<i>"They are effective as Nicotine Replacement Therapy"</i> (S2, Advisor)
			E-cig as medicine/treatment	<i>"I think a lot of people self-medicate using the e-cigarettes"</i> (S3, Advisor)
			Good substitute	<i>"it is certainly a very good substitute"</i> (11K, user)
			Not good substitute	<i>"I don't find it to give me total satisfaction that a normal cigarette gave me"</i> (2B, user)
			Uncertain Safety	<i>"we don't know whether they [electronic cigarettes] are 100% safe at all"</i> (9I, user) <i>"I wish I could tell them with absolute surety what the safety is and I can't. I wish I can tell them with absolute surety how much nicotine they are getting from the product and I can't. So I think there are gaps there that I would like to fill."</i> (H6, advisor)
	The Ambiguity of Electronic Cigarettes 'Risk	Theme Risk debate Subthemes Health & Safety Risk	Uncertain long-term effect	<i>"There's no long-term studies. That kind of worries"</i> (12L, user) <i>"but what are the health risks for people inhaling propylene glycol over periods of time"</i> (S2, Advisor)
			e-cig is Safe	<i>"I would say it should be allowed, it doesn't do any harm... the electronic cigarette does nothing actually"</i> (4D, user)

			Less harmful than cigarettes	<i>"Obviously this is less harmful to you and people around you" (10J, user)</i>
		Social Risk	Renormalisation	<i>"About how it looks. I think generally there has been a huge amount of work to achieve the stop smoking ban in public places that is: any transport, any restaurant, any sort of public place, and I think to allow electronic cigarettes in those places will be a retrograde step" (H5, advisor).</i>
			Develop addiction to e-cigarettes	<i>"It started to happen not that often but I know three instances in the last few weeks when people are presented to us stated that they already quit cigarette but wanted to come off electronic cigarettes and that's brand new for us" (S2, Advisor).</i>
			Maintain addiction to nicotine	<i>"I mean there are no health warnings on it, because no one has discovered any health dis-benefits apart from the fact that it will keep you addicted to nicotine. And I think most people who smoke electronic cigarettes, I think, know that nicotine is highly addictive" (14N, user).</i>
			Stigma/unacceptability	<i>"I think the stigma that smokers had has kind of carried on to the electronic cigarette users in the sense that the stigma surrounding the addiction itself" (12L, user)</i>
				<i>"Some people who are already strongly anti-smoking probably won't be happy seeing them. But I think the majority will probably accept them" (S4, Advisor)</i>
			Not gateway risk	<i>"I don't think there is any evidence at the moment that children are starting to use electronic cigarettes, that it is used as a gateway drug. But I don't think we have got enough evidence; longitudinal evidence" (H6, Advisor)</i>

			Gateway risk	<i>"I don't know. But I don't see why they can't happen. If you build up a nicotine addiction through vaping, and one day you walk past an airport and there's no other way of getting your fix than buying a packet of cigarettes, because no one sells – I can well imagine people will try that" (12L, user).</i>
2. E- cigarettes as Means for empowerment	Focus on individualisation	Theme Focus on Personal responsibility	users' accountability	<i>"the service doesn't have to take the responsibility for it, so if it's found that there is something wrong, health wise or something eventually it's my own fault I do understand that" (5E, user)</i> <i>"I do what I want I am old enough to make my own decisions now" (15O).</i>
			advice only	<i>"I just give them advice and guidance and do what I can but not to tell them what to do" (S3, Advisor)</i>
		self-regulation	User's choice	<i>"it has to be their individual choice" (H5, Advisor)</i>
			Willpower	<i>"I would need the willpower to get off the nicotine" (11K, user)</i>
		empowerment	Build confidence	<i>"when I deal with my patients I emphasise that ok we are talking about this smoking addiction but it exactly the same like any kind of addiction, it could be a gambling addiction it could be any sort of behaviour change so this is the way how I help them to distract themselves so this isn't about smoking this is about whole let's get your goals and get yourself back." (H4, Advisor)</i>
		expert lay users	Be in control	<i>"the whole point you want them to have a better lifestyle and not being controlled and make sure the cigarettes not in control of them" (H1, Advisor)</i>
				<i>"I feel more in control" (5E, user)</i>

3. E- cigarettes as Means for Social Change	Formation of new realms in society	Theme		
		New habit and links	Others are interested accepted by others	<i>"I like it when people ask me what I'm doing and I show them my machine and they get very interested in it" (14N, user)</i> <i>"...they are [kids] proud of me giving up smoking my husband prefers it" (1A, user)</i> <i>"I go to my daughter's house I smoke the e-cigarette, she like it and making her happy" (13M, user)</i>
		Subthemes:		
		Acceptable Recreational Nicotine Use	E-cig is different than cig, attractive /acceptable positive change	<i>"I think it definitely is, the vaping community is getting bigger they do seem to want to have an identity. A couple of facts. From the people I spoken to quite few they are quite proud of themselves that they don't smoke, they are seen as doing something new and exciting and I think again on a long term I think their perception is they try to distance themselves. Certainly for people they have been on for a longer time It's not about the smoking it's about lifestyle you certainly see that with" (S2, Advisor)</i>
		Vaper identity	community identity new exciting lifestyle hobby	<i>"It doesn't look like a cigarette. I don't smoke one that looks like cigarettes... I admire the vapers because I think that they are very smart" (14N, user)</i> <i>"Well its turning into a hobby I could put it down and not using it at all any more but it's like a big hobby for me I got very advanced device and I like going to events and things about them" (9I, user)</i>
		New social links	Links with Tobacco industry	<i>"I know a lot of people wouldn't associate tobacco companies with safety, but at least like the large multinational company, they will have much more internal testing of these things than, you know, somebody working in their shed in Northumberland. So actually I tend to trust the tobacco industry electronic cigarettes probably a bit more" (12L, user).</i> <i>"So you have got a bit of a dilemma. Do you want to give out a product that ultimately has been made by a tobacco company?" (S6, Advisor).</i>

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